WHAT'S IN A NUMBER: ARGUING ABOUT COST-BENEFIT ANALYSIS IN ADMINISTRATIVE LAW

By

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Michigan v. EPA *and a rash of administrative law decisions from the D.C. Circuit have resuscitated a longstanding debate over the role of cost-benefit analysis in a regulatory democracy. The debate in its present form contrasts quantitative (or formal) approaches to qualitative (or informal) ones. However, the distinction between quantitative analysis and qualitative balancing is distracting, and even misleading, because monetization and aggregation, rather than quantification, is at the heart of cost-benefit analysis.*

This Article elucidates three interpretations of monetization and aggregation, and hence, cost-benefit analysis. Welfarist cost-benefit analysis serves as an indicator of a rule's impact on overall well-being. Replicative cost-benefit analysis, on the other hand, strives to identify and reproduce the outcomes that would have prevailed under a particular set of arrangements, a frictionless market being the most salient example. Finally, rationalizing cost-benefit analysis seeks to demonstrate that there is a set of numbers, satisfying certain structural and substantive conditions, that makes the rule at issue the best one.

These interpretations of cost-benefit analysis are not necessarily exclusive. But they represent differing approaches for understanding monetization and aggregation. Adopting them as part of the vocabulary for debating cost-benefit analysis facilitates critical examination of the practice and its justifications. While the academic dispute over the normative desirability of a cost-benefit standard remains unsettled, existing doctrine suggests that judges reviewing administrative action for arbitrariness may only impose on agencies cost-benefit analysis that is rationalizing.

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1. Introduction

"Cost-benefit analysis can take many forms. It varies from a formal analysis in which all costs and benefits are quantified in an identical unit of measurement, usually dollars, and compared, to an informal analysis where costs and benefits are identified, quantified if possible, and balanced."[1]

1.1 Cost Benefit Analysis in the Administrative State

Talk of costs and benefits pervades administrative law. The most conspicuous adoption of the cost-benefit paradigm in the American administrative state is the review of regulations promulgated through informal rulemaking by the Office of Information and Regulatory Affairs (OIRA), nested within the Executive Office of the President of the United States. A series of executive orders (EO), beginning with President Reagan's EO 12291[2] and ending, most recently, with President Obama's EO 13563[3] have entrenched a formal mechanism for the White House to delay, revise, and even reject an administrative agency's rule if it yields less benefits than costs. As instructed in President Clinton's EO 12866,[4] administrative agencies (that are not independent) must, "to the extent permitted by law," "assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs."

Statutes may also command administrative agencies to engage in cost-benefit calculus. Congress first introduced the language of costs and benefits into legislation in the 1930s.[5] By the mid-1940s, the Army Corps of Engineers was conducting cost benefit analyses for flood control projects as part of their statutory duty.[6] But Congress is not always explicit about whether

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[1] Sierra Club v. Sigler, 695 F.2d 957, 976 n.15 (5th Cir. 1983)
[2] Exec. Order No. 12,291, 46 Fed. Reg. 13,193 (Feb. 17, 1981).
[3] Exec. Order No. 13,563, 76 Fed. Reg. 3821 (Jan. 18, 2011).
[4] Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Sept. 30, 1993).
[5] *See, e.g.,* PETER H. SCHUCK, WHY GOVERNMENT FAILS SO OFTEN: AND HOW IT CAN DO BETTER 45–46 (2014). *See also* ROBERT L. GLICKSMAN & SIDNEY A. SHAPIRO, RISK REGULATION AT RISK: RESTORING A PRAGMATIC APPROACH 37–45 (2003) (contrasting a cost-benefit standard with a "constrained balancing standard" in which "Congress constrains or limits the manner in which an agency is to balance the costs and benefits of risk regulation," e.g. a technology-based standard, and an "open-ended balancing" in which Congress "require[s] that agencies consider a variety of factors, including regulatory costs and benefits, before deciding how to regulate, but tend not to dictate the weight the agency must place on each factor.").
[6] The Flood Control Act of 1936, 33 U.S.C.A. § 701 (2012), provided that the "Federal Government should improve or participate in the improvement of navigable waters or their tributaries, including watersheds thereof, for flood-control purposes if the benefits to whomsoever they may accrue are in excess of the estimated costs, and if the lives and social security of people are otherwise adversely affected." *See also* Am. Textile Mfrs. Inst., Inc. v. Donovan, 452 U.S. 490, 510 (1981) (giving the act as an example of when Congress clearly intended that the agency engage in cost benefit analysis). The Army Corps of Engineers had, however, subjected projects to a cost-benefit test even before the passage of the Act. THEODORE M. PORTER, TRUST IN NUMBERS: THE PURSUIT OF OBJECTIVITY IN SCIENCE AND PUBLIC LIFE 154 (1995).

agencies may or must weigh costs against benefits and how they are to do so. These issues are therefore frequently litigated and resolved by the courts through statutory interpretation.

In the early case of *Whitman v. American Trucking Associations,* the Supreme Court agreed that § 109(b) of the Clean Air Act (CAA) directing the Environmental Protection Agency (EPA) to set national ambient air-quality standards (NAAQS) "requisite to protect the public health" while leaving "an adequate margin of safety" did not implicitly authorize the agency to rely on cost-benefit analysis.[7] Justice Scalia, writing for the majority, thought it "fairly clear" that the text precluded the agency from "consider[ing] costs in setting the standards" and "refused to find implicit in ambiguous sections of the CAA an authorization to consider costs that has elsewhere, and so often, been expressly granted."[8] In contrast, the high court, in the later case of *Entergy Corp. v. Riverkeeper, Inc.*, decided that the "best technology available" standard of the Clean Water Act (CWA) did not foreclose "consideration of the technology's costs and of the relationship between those costs and the environmental benefits produced."[9] The administrative agency's reading of the statute was therefore reasonable and entitled to deference.[10] *EPA v. EME Homer City Generation* similarly held that the ambiguity in the language of the CAA did not bar a cost-sensitive approach to regulation.[11] This is because Congress had tasked the EPA to reduce a state's upwind emissions that "significantly contribute to nonattainment" of NAAQs by another state but had not provided a formula for "allocat[ing] among multiple contributing upwind States responsibility for a downwind State's excess pollution."[12] Congress's silence "effectively delegate[d] authority to EPA to select from among reasonable options."[13]

The D.C. Circuit has occasionally gone even further, requiring (and not merely permitting) the consideration *and* quantification of costs. In *Chamber of Commerce v. SEC*, the court held that the SEC had violated the Administrative Procedure Act (APA) by failing to quantify the costs of mandating an independent chair, and more independent directors, on the board of mutual funds.[14] *Business Roundtable v. SEC* struck down a rule requiring public companies to include in their annual proxy statements information about candidates nominated by large shareholders.[15] Characterizing the studies cited by the SEC as "relatively unpersuasive," the court ruled that the Commission had "relied upon insufficient empirical data when it concluded that [the rule would] improve board performance and increase shareholder value by facilitating the election of dissident shareholder nominees."[16] This decision has been read by many commentators as an attempt to foist quantified cost-benefit analysis on independent financial agencies, and assailed on grounds of

[7] Whitman v. Am. Trucking Ass'n, 531 U.S. 457, 465–71 (2001).
[8] *Id*.
[9] Entergy Corp. v. Riverkeeper, Inc., 556 U.S. 208, 217 (2009) (citation omitted).
[10] *Id*. at 226.
[11] EPA v. EME Homer City Generation, L.P., 572 U.S. 1, 20 (2014).
[12] *Id*. at 21.
[13] *Id.* at 4.
[14] Chamber of Commerce v. SEC, 412 F.3d 133, 133–34 (D.C. Cir. 2005).
[15] Business Roundtable v. SEC, 647 F.3d 1144, 1154 (D.C. Cir. 2011).
[16] *Id.* at 1150–51.

efficiency and legality.[17] Detractors assert that cost-benefit analysis of financial regulations does not survive a cost-benefit test because the effects of these regulations are hopelessly difficult to foresee.[18] Moreover, critics urge that there is no legal basis for coercing independent financial agencies into undertaking quantified cost-benefit analysis.[20] Indeed, the Supreme Court in a series of cases beginning from *Vermont Yankee Nuclear Power Corp. v. NRDC* has repeatedly admonished courts not to demand of agencies procedures that have not been mandated by Congress.[21] A judicial directive that agencies conduct quantified cost-benefit analysis transgresses this established and venerable principle of administrative law.[22]

Most recently, the Supreme Court ruled in *Michigan v. EPA* that the EPA was not only permitted, but obliged, to take cost into account when regulating power plants under a provision that permitted such regulation if "appropriate and necessary."[23] This result has only added fuel to the debate over cost-benefit analysis. Advocates of cost-benefit analysis hailed Justice Scalia's acknowledgement that "[o]ne would not say that it is even rational, never mind 'appropriate,' to impose billions of dollars in economic costs in return for a few dollars in health or environmental benefits" as marking the coming of age of the cost-benefit state.[24] Their adversaries, on the other hand, took the justice's clarification that the court "need not and [did] not hold that the law unambiguously required . . . a formal cost-benefit"[25] as repudiating the idea that administrative agencies must carry out "quantified" cost-benefit analysis as part of rulemaking.[26]

1.2 Quantified versus Non-Quantified Cost Benefit Analysis

Although it is fair to say that the state of current jurisprudence grants agencies discretion in the accounting of costs and benefits,[27] some scholars urge that agencies act arbitrarily by failing to engage in quantified cost-benefit analysis. This is because for all its shortcomings, "[quantified cost benefit analysis] is the best available method for assessing the effects of regulation on social welfare."[28] Others maintain, however, that agencies are under no legal obligation to conduct quantified cost benefit analysis. As "quantified" cost-benefit analysis "is both disputable and

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[17] John C. Coates IV, *Cost-Benefit Analysis of Financial Regulation: Case Studies and Implications*, 124 YALE L.J. 882, 997–98 (2015).
[18] *See id.* at 902–03, 895.
[20] *Id.* at 912–19.
[21] Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 557 (1978).
[22] *See*, *e.g.*, James D. Cox & Benjamin J.C. Baucom, *The Emperor Has No Clothes: Confronting the D.C. Circuit's Usurpation of SEC Rulemaking Authority*, 90 TEX. L. REV. 1811, 1813 (2012). *See also* ADRIAN VERMEULE, LAW'S ABNEGATION: FROM LAW'S EMPIRE TO THE ADMINISTRATIVE STATE 171–72 (2016).
[23] Michigan v. EPA, 135 S. Ct. 2699, 2711 (2015).
[24] Cass R. Sunstein, *Thanks, Justice Scalia, for the Cost-Benefit State*, BLOOMBERG, Jul. 7, 2015, https://www.bloomberg.com/view/articles/2015-07-07/thanks-justice-scalia-for-the-cost-benefit-state.
[25] *Michigan*, 135 S. Ct. at 2711.
[26] Amy Sinden, *Supreme Court Remains Skeptical of the "Cost-Benefit State"*, REG. REV., Sep. 26, 2016, https://www.theregreview.org/2016/09/26/sinden-cost-benefit-state/.
[27] Amy Sinden, *A 'Cost-Benefit State'? Reports of Its Birth Have Been Greatly Exaggerated*, 46 ENVTL. L. REP. 10933, 10934 (2016); Sinden, *supra* note 25; Adrian Vermeule, *Does Michigan v. EPA Require Cost-Benefit Analysis?*, NOTICE & COMMENT, Feb. 6, 2017, http://yalejreg.com/nc/does-michigan-v-epa-require-cost-benefit-analysis-by-adrian-vermeule/.
[28] Cass R. Sunstein, *Cost-Benefit Analysis and Arbitrariness Review*, 41 HARV. ENVTL. L. REV. 1, 9 (2017)

widely disputed[,] [t]o impose it on agencies in the name of rationality would be to squelch reasonable disagreement by sheer force."[29]

This debate has been conducted by juxtaposing qualitative cost-benefit balancing and quantified cost-benefit analysis because of the "slippage in this literature between a tautology, on the one hand, and a highly sectarian decision-procedure, on the other."[30] The "tautology" is the mundane admonition that one should only take an action if its benefits exceed its costs. It is identified with an informal, qualitative style of cost-benefit reasoning, and exemplified by Benjamin Franklin's "moral or prudential algebra":

> [M]y 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*[,] . . . put[ting] down under the different Heads short Hints of the different Motives . . . *for* or *against* the Measure[,] . . . [and] estimating their respective Weights[,] . . . [even] tho' the Weight of Reasons cannot be taken with the Precision of Algebraic Quantities . . . .[31]

The "highly sectarian decision-procedure," in contrast, entails a deep-seated commitment to the normative premises underlying cost-benefit analysis as it is performed by administrative agencies (and their consultants) for OIRA's review. This formal, quantitative style of cost-benefit reasoning is the subject of the Office of Management and Budget (OMB)'s Circular A-4.[32] According to Circular A-4, "[a] distinctive feature of [cost-benefit analysis] is that both benefits and costs are expressed in monetary units, which allows you to evaluate different regulatory options with a variety of attributes using a common measure."[33] "By measuring incremental benefits and costs of successively more stringent regulatory alternatives," the circular continues, "you can identify the alternative that maximizes net benefits."[34] On the view set forth in Circular A-4, "unquantified" cost-benefit analysis is an oxymoron.

Cost-benefit analysis, as explained by Circular-A4, is executed in several distinct stages, quantification being but one of them.[35] Consider Congress's directive to the Securities and Exchange Commission (SEC) to implement rules subjecting issuers of United States securities to certain disclosure requirements if they manufacture, or contract for the manufacture of, products containing conflict minerals.[36] The goal of this statutory and regulatory scheme is to alleviate human rights abuses in the Congo region, including rape.[37] To simplify, assume that the prevention of rape is the only benefit of the SEC's conflict minerals regime. The task of *quantification*, in this

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[29] Vermeule, *supra* note 22, at 171.
[30] *Id.* at 170.
[31] BENJAMIN FRANKLIN, BENJAMIN FRANKLIN: REPRESENTATIVE SECTIONS, WITH INTRODUCTION, BIBLIOGRAPHY AND NOTES 348–49 (Frank Luther Mott & Chester E. Jorgenson eds.,1936).
[32] OFFICE OF MGMT & BUDGET, EXEC. OFFICE OF THE PRESIDENT, CIRCULAR A-4 (2003), https://obamawhitehouse.archives.gov/omb/circulars_a004_a-4/.
[33] *Id.*
[34] *Id.*
[35] *Id*.
[36] 15 U.S.C. § 78m(p)(1)(A) (2012).
[37] *See* Alexandrea L. Nelson, Note, *The Materiality of Morality: Conflict Minerals*, 2014 UTAH L. REV. 219, 222–24 (2014).

scenario, is to estimate the number of rapes that would be prevented by the disclosure requirements. The next step—*monetization*—is to ascribe a dollar value to each rape prevented. *Aggregation* then produces a single number that summarizes the gross benefit of regulation. As a stylized example, suppose that the disclosure requirements, as finalized by the SEC, are likely to reduce the incidence of rapes in the Congo by five annually (quantification) and the dollar value of preventing a rape is $300,000 (monetization). The gross benefit of the conflict minerals rules is therefore $300,000 × 5 = $1,500,000 per year (aggregation). As articulated by the OMB, quantification is merely a component of cost-benefit analysis.[38] Some academic commentators, however, understand quantification to comprise monetization.[39] This Article will differentiate between quantification, monetization, and aggregation.

Distinguishing between quantification, monetization, and aggregation is analytically helpful because the contrast drawn between "quantified" and "unquantified" cost-benefit analysis[40] breeds confusion. The issue of quantification, as opposed to monetization and aggregation, is a red herring because quantification should always be undertaken if feasible and relatively costless.[41] It is not sensible to make any decision, much less an important one, on the basis of less rather than more information, especially when such information is obtainable through comparatively modest efforts.[42] If it could be cheaply ascertained that the introduction of a vastly more stringent emissions standard reduces the risk of a severe pulmonary disease by half a percentage point but increases unemployment by a full percentage point, a rational decision-maker should retrieve and take these numbers into account, whether or not she subscribes to qualitative balancing or quantitative analysis of costs and benefits.[43] Regardless of her ideological disposition, it is better for the decision-maker to apprise herself of this trade-off than to wallow in the ambiguity of descriptors such as "small" and "large."[44] Some resist this conclusion because it seems to imply

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[38] OFFICE OF MGMT. & BUDGET, CIRCULAR A-4, *supra* note 32.

[39] Jeff Schwartz & Alexandrea Nelson, *Cost-Benefit Analysis and the Conflict Minerals Rule*, 68 ADMIN. L. REV. 287, 331 (2000).

[40] To presage the next section, "unquantified" cost benefit analysis is not a form of CBA on the definition that I set out later.

[41] In an essay decrying the "stupidity" of the cost-benefit standard, Henry Richardson nevertheless acknowledges "the importance of collecting information about the benefits and costs of alternative proposals," calling it "the first step in any intelligent process of deliberation." Henry S. Richardson, *The Stupidity of the Cost-Benefit Standard*, 29 J. LEGAL STUD. 971, 973 (2000);

Quantification in the face of such uncertainty is an interesting issue that is related to but not, on my view, at the crux of, the debate over cost-benefit analysis. *See*, *e.g.*, David M. Driesen, *Cost-Benefit Analysis and the Precautionary Principle: Can They Be Reconciled?*, 2013 MICH. ST. L. REV. 771, 776–78 (2013); Daniel A. Farber, *Uncertainty*, 99 GEO. L.J. 901, 901 (2010).

[42] *See* I.J. Good, *On the Principle of Total Evidence*, 17 BRITISH J. FOR PHIL. SCI. 319 (1967) (proving that an expected-utility maximizing decision-maker should always choose to acquire cost-free information); *but see* Joseph B. Kadane, Mark Schervish & Teddy Seidenfeld, *Is Ignorance Bliss?*, 105 J. PHIL. 5 (2008) (considering situations where a decision-maker might choose to avoid cost-free information).

[43] *See*, *e.g.*, David M. Driesen, *Is Cost-Benefit Analysis Neutral?*, 77 U. COLO. L. REV. 335, 337 (2006). *See also* RICHARD L. REVESZ & MICHAEL A. LIVERMORE, RETAKING RATIONALITY: HOW COST-BENEFIT ANALYSIS CAN BETTER PROTECT THE ENVIRONMENT AND OUR HEALTH 12 (2008) (maintaining that while cost benefit analysis has frequently been employed to defeat regulation, this is not a necessary consequence of using cost benefit analysis).

[44] Amy Sinden has "qualitative description" anchoring the informal end of the "assessment of cost and benefits" axis, and "all significant costs [and] benefits [are] quantified and monetized" anchoring the other, formal end. "Full (or partial) quantification but in different metrics" is closer to the informal side of the continuum. Amy Sinden, *Formality and Informality in Cost-Benefit Analysis*, 2015 UTAH L. REV. 93, 108 (2015).

an endorsement of "quantified" cost-benefit analysis. For instance, Elizabeth Anderson, in an influential critique of cost-benefit analysis, acknowledges that "[p]articipants in the policy formation process will . . . need to consult experts to gather facts about potential negative and positive consequences of alternative policy proposals," but insists that "these facts are best presented qualitatively, in terms deemed relevant by the participants."[45] It is ambiguous whether Anderson opposes—in addition to monetization and aggregation—the quantification of potential consequences. Such a stance, however, throws the baby out with the bathwater. A skeptic of cost-benefit analysis can embrace quantification while rejecting monetization and aggregation.

The failure to demarcate quantification from monetization and aggregation can render the hostility to "quantified" cost-benefit analysis overbroad. It can also result in arguments for quantification being taken as arguments for "quantified" cost-benefit analysis.[46] To illustrate, an advantage of "quantified" cost-benefit analysis is that is it can mitigate the effects of cognitive bias on decision-making.[47] An example is the availability heuristic—the tendency to assign a higher probability to events if instances of their occurrence are more easily recalled.[48] Although reliance on the availability heuristic could be efficient given our scarce mental resources, it can result in overestimation of the frequency of accidents that attract greater media attention and underestimation of the frequency of those that do not. This misappreciation of risk may then translate in calls for the regulation of relatively minor, yet salient, threats. According to Cass Sunstein,

> The effect of cost-benefit analysis is to subject a public demand for regulation to a kind of technocratic scrutiny, to ensure that the demand is not rooted in myth, and to ensure as well that government is regulating risks even when the public demand (because insufficiently informed) is low. And here too there is no democratic problem with the inquiry into consequences. If people's concern is fueled by informational forces having little reliability, and if people express concern even though they are not fearful, a governmental effort to cool popular reactions is hardly inconsistent with democratic ideals. Similarly, there is nothing undemocratic about a governmental effort to divert resources to serious problems that have not been beneficiaries of cascade effects.[49]

It is difficult—indeed, silly—to object to decision-making that is grounded in hard facts rather than imagined fears. But it is not apparent that monetization and aggregation, as opposed to the quantification of objective risks, are necessary for "quantified" cost-benefit analysis to have this

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[45] ELIZABETH ANDERSON, VALUE IN ETHICS AND ECONOMICS 215 (1993).
[46] *See, e.g.*, Cass R. Sunstein, *The Arithmetic of Arsenic*, 90 GEO. L. J. 2255, 2263 (2002) ("The problems in intuitive toxicology and the crudeness of the affect heuristic seem strongly to support the use of CBA, understood not as a way to stop regulation, but to ensure that when government acts, it does so with some understanding of the likely consequences.").
[47] Cass R. Sunstein, *Cognition and Cost-Benefit Analysis*, 29 J. LEGAL STUD. 1059, 1065–66 (2000); Cass R. Sunstein, *Is Cost-Benefit Analysis a Foreign Language?*, Q. J. EXPERIMENTAL PSYCHOL. (forthcoming 2017), http://journals.sagepub.com/doi/pdf/10.1080/17470218.2017.1373833.
[48] *See*, *e.g.*, Sunstein, *supra* note 47, at 1065.
[49] Sunstein, *supra* note 47, at 1067.

salutary effect.[50] The danger here is that monetization and aggregation are being smuggled in through the Trojan horse of quantification.

Moreover, if the actual risks are unknown or unknowable, then the argument over "quantified" as opposed to "non-quantified" cost benefit analysis is beside the point and distracting. Following the economic literature, I will refer to a situation where the probability of every potential outcome is known as involving risk and a situation where the probabilities of some outcomes are unknown or unknowable as involving uncertainty.[51] Imagine then a casino game played using an urn containing 60 balls. 20 of these balls are red, while the rest are either yellow or black.[52] Assume that one ball is to be picked from the urn and that the default lottery is a dollar if a red ball is drawn and nothing otherwise. The probability of drawing a red ball is therefore $\frac{1}{3}$ and the expected value of the default lottery is $\frac{1}{3} \times \$1 + \frac{2}{3} \times \$0 = \$\frac{1}{3}$. The gambler can, however, elect a second lottery that pays a dollar if a black ball is drawn and nothing otherwise. Now, suppose the gambler chooses the second lottery. Observing this, we interrupt and ask her to support her decision using "quantified" cost-benefit analysis. This can certainly be done by assigning a probability great than $\frac{1}{3}$ to the chance of drawing a black ball. Whether the gambler employs quantitative analysis or qualitative balancing does not resolve the issue of whether her decision is wise or "arbitrary and capricious."[53]

To conclude, monetization and aggregation, not quantification, is the normative core of cost benefit analysis. This is because a decision-maker should always strive to apprise herself of the likely consequences of her actions. Where the consequences are unfathomable, neither quantified nor unquantified cost-benefit analysis is obviously superior to the other. Hence, the distinction between quantified and non-quantified cost benefit-analysis is not the best one for disputing the cost-benefit administrative state.

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[50] *Cf.* STEPHEN BREYER, BREAKING THE VICIOUS CIRCLE: TOWARD EFFECTIVE RISK REGULATION 35 (1993) ("The public's 'nonexpert' reactions reflect not different values but different understandings about the underlying risk-related facts.").

[51] *See* FRANK H. KNIGHT, RISK, UNCERTAINTY AND PROFIT 199 (1921).

[52] This example is inspired by the Ellsberg paradox. *See* Daniel Ellsberg, *Risk, Ambiguity, and the Savage Axioms*, 75 Q.J. ECON. 643, 647–48 (1961).

[53] *Cf.* Sunstein, *supra* note 28. Advocates of "quantified" cost-benefit analysis in the face of uncertainty usually fall back on claims about the decision maker's "latent knowledge and expertise." Jonathan S. Masur & Eric A. Posner, *Unquantified Benefits and the Problem of Regulation under Uncertainty*, 102 CORNELL L. REV., 87, 120 (2016). But the credibility of these claims is independent of quantification. A separate argument is that even if the numbers are no more than guesses, they should be furnished on the basis of regulators' beliefs because they "provide a basis for evaluating the regulators' reliability as additional information is disclosed later on" and "for revisions in light of additional information." *See id*. I have no quarrel with this idea, but would add, in the same vein, that uncertainty may counsel an incremental rather than comprehensive rational approach to policymaking. *See* Colin S. Diver, *Policymaking Paradigms in Administrative Law*, 95 HARV. L. REV. 393, 394–95 (1981); *see generally* GLICKSMAN & SCHAPIRO, *supra* note 4.

1.3 Defining Cost-Benefit Analysis

It is trite to say that in considering a course of action, one should ponder, seriously, its costs and its benefits. To leap from this bland platitude to the conclusion that rational regulation demands cost benefit analysis[54] is, however, too quick because cost-benefit analysis involves more than just contemplation of the consequences of a decision.

For ease of exposition, I henceforth use the term cost-benefit analysis to refer generally to the reckoning of costs and benefits in regulation and the abbreviation CBA to refer more specifically to a type of cost-benefit analysis. Although members of the CBA family come in many shapes and sizes, they usually feature identification, quantification, monetization, aggregation, and comparison.[55] Ideally, the conscientious analyst performing CBA identifies the available alternatives, quantifies the consequences that each alternative could be expected to have, monetizes the quantified expressions of these consequences, and then aggregates these monetized valuations according to some formula to assign a number to each alternative. These numbers may be compared to each other or they may be compared to some pre-defined baseline. By describing CBA in structural terms, I mean to accommodate approaches that differ as to the composition of society, the theoretical foundations of monetization, and the ethical concerns that are reflected, through the choice of a discount rate or distributional weights, in aggregation. Thus defined, CBA encompasses cost-benefit analysis as it is set out in economic textbooks [56] and currently implemented by administrative agencies (conventional CBA). These mainstream versions of CBA (conventional CBA) take individual willingness-to-pay (WTP) as the basis for monetization. The monetary value ascribed to a good is the amount of numeraire that the beneficiary would be willing to pay to enjoy it.[57] But CBA, on the definition set out here, also comprehends variants that have been espoused in the evolving academic literature, such as well-being analysis. Well-being analysis monetizes goods by relying on subjective well-being indicators rather than WTP.[58] Instead of taking forward-looking preferences to be indicative of monetary value, well-being analysis looks backwards to empirical data on the impact of a good on an individual's moment-to-moment

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[54] *See*, *e.g.*, Natural Resource Damage Assessments, 50 Fed. Reg. 52,141 (proposed Dec. 20, 1985) ("If use value is higher than the cost of restoration or replacement, then it would be more rational for society to be compensated for the cost to restore or replace the lost resource than to be compensated for the lost use. Conversely, if restoration or replacement costs are higher than the value of uses foregone, it is rational for society to compensate individuals for their lost uses rather than the cost to restore or replace the injured natural resource."); Ohio v. U.S Dep't of the Interior, 880 F.2d 432, 456 (D.C. Cir. 1989) (characterizing this as "nothing more or less than cost-benefit analysis").

[55] ANTHONY E. BOARDMAN ET AL., COST-BENEFIT ANALYSIS: CONCEPTS AND PRACTICE 6 (4th ed. 2010).

[56] *See*, *e.g.*, *id.*

[57] *See generally* IAN J. BATEMAN ET AL., ECONOMIC VALUATION WITH STATED PREFERENCE TECHNIQUES: A MANUAL 24–28 (2002). *See* OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT, CIRCULAR A-4 (2003), https://obamawhitehouse.archives.gov/omb/circulars_a004_a-4/ (acknowledging that "willingness to pay is generally the preferred economic method for evaluating preferences"). *See also* CASS R. SUNSTEIN, THE COST-BENEFIT STATE: THE FUTURE OF REGULATORY PROTECTION 77 (2002) (stating that notwithstanding wide variations in the value of a statistical life across administrative agencies, "willingness to pay is the general basis for undertaking calculations").

[58] Matthew D. Adler, *Happiness Surveys and Public Policy: What's the Use?*, 62 DUKE L. J. 1509, 1523–24 (2013); John Bronsteen et al., *Well-Being Analysis v. Cost-Benefit Analysis*, 62 DUKE L.J. 1603, 1616 (2013).

affect or personal judgment of life satisfaction. Well-being analysis is, for the purposes of this Article, a species of CBA.

The use of CBA as a regulatory tool has many attractions. Champions tout the efficiency gains achievable through rigorous CBA.[59] Furthermore, by making the assumptions behind a decision explicit and susceptible to challenge, CBA fosters transparency and fairness.[60] But CBA has also seen its fair share of critics.[61] According to them, CBA is founded on a mistaken theory of value,[62] pretends to equate incommensurable goods,[63] and is an unreliable method, even as to the dimension that it sets out to measure.[64] I do not attempt to adjudicate this controversy here. Instead, this Article explores the interpretations that could be attached to CBA and their implications for the cost-benefit administrative state.

2. Three Interpretations of CBA

While the contemporary discourse on the cost-benefit state is dominated by the confrontation between quantified (or "formal") and non-quantified (or "informal") cost-benefit analysis, it is the interpretation of monetization and aggregation that is more germane to the theory and practice of cost-benefit analysis in a regulatory democracy. Or so I shall argue.

2.1 Welfarist CBA

The most robust normative defenses of CBA disclaim CBA's pretension to being comprehensive and hence, conclusive. CBA does not render an all-things-considered judgment as to the right or correct course of action to take.[65] For example, Matthew Adler and Eric Posner make the case for CBA not by embracing utilitarianism, but by characterizing overall well-being as one morally significant factor among others.[66] This position is referred to as "weak welfarism."[67] According to weak welfarism, decision-makers seeking to do the right thing should

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[59] *See, e.g.*, 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 177–79 (Robert W. Hahn ed., 1996).
[60] *See*, *e.g.*, MATTHEW D. ADLER & ERIC A. POSNER, NEW FOUNDATIONS OF COST-BENEFIT ANALYSIS 123 (2006).
[61] *See*, *e.g.*, FRANK ACKERMAN & LISA HEINZERLING, PRICELESS: ON KNOWING THE PRICE OF EVERYTHING AND THE VALUE OF NOTHING 8–9 (2004).
[62] *See*, *e.g.*, ANDERSON, *supra* note 45, at 190–220; Gregory C. Keating, *Is Cost-Benefit Analysis the Only Game in Town?*, 91 S. CAL. L. REV. 195, 206–08 (2018).
[63] For a treatment of this line of objection, see Matthew Adler, *Incommensurability and Cost-Benefit Analysis*, 146 U. PA. L. REV. 1371, 1376–77 (1998).
[64] For a concise and careful survey of these arguments, see Charles Blackorby and David Donaldson, *A Review Article: The Case against the Use of the Sum of Compensating Variations in Cost-Benefit Analysis*, 23 CAN. J. ECON. 471 (1990).
[65] *See* Richard A. Posner, *Cost-Benefit Analysis: Definition, Justification, and Comment on Conference Papers*, 29 J. LEGAL STUD. 1153, 1154–56 (2000) (identifying three uses of cost benefit analysis: "[as] pure evaluation, . . . [as] an input into decision, . . .or as the decision rule").
[66] ADLER & POSNER, *supra* note 60, at 52–61.
[67] *Id.* at 26.

undertake CBA because it is an indicator of overall well-being.[68] I shall call CBA that is so justified and interpreted welfarist CBA.

2.1.1 Theories of Well-Being

Welfarist CBA conveys information about overall well-being.[69] Well-being refers to "how well [a life] is going for the individual whose life it is," and an individual's life is going well for her insofar as it has prudential, as opposed to aesthetic, ethical, or perfectionist, value.[70] As others have recognized, there is a lively dispute over the nature of well-being.[71] Although it is undeniable that there are things that always contribute to an individual's well-being, what it is about these things that make them prudentially valuable remains contested.[72]

Hedonic accounts locate prudential value in a state of the mind. Jeremy Bentham, for example, held that that pleasure is good for a person and pain, bad for her, and that well-being supervenes on these sensations alone.[73] The value attached to a pleasure or a pain—considered in isolation—is then differentiated by its "intensity[,] . . . duration[,] . . . certainty or uncertainty[,] . . . [and] propinquity or remoteness."[74] Bentham's contention is, however, vulnerable to the critique that pleasures/pains do not have a uniform quality and the pleasure/pain derived from one activity might be different in kind from the pleasure/pain derived from another.[75] An objection—one that traces back to Socrates—is that on Bentham's terms, the faintly pleasant life of an oyster, if sufficiently enduring, can be better for an individual than the life of a human being in all its richness.[76]

James Mill and Henry Sidgwick avoided these difficulties by introducing a primitive attitude that characterizes pleasures and pains. Mill appeals to the preference for prolonging pleasure and for ending pain,[77] while Sidgwick defines pleasure "as a feeling which, when

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[68] *Id.* at 53.
[69] *Id.*
[70] L.W. SUMNER, WELFARE, HAPPINESS & ETHICS 20–25 (1996).
[71] *See*, *e.g.*, MATTHEW D. ADLER, WELL-BEING AND FAIR DISTRIBUTION: BEYOND COST-BENEFIT ANALYSIS 155–81 (2011).
[72] The classification of the competing accounts into "hedonic, . . . desire-based . . . and objective list" theories is laid out in DEREK PARFIT, REASONS AND PERSONS 493 (1984). *See also* SUMNER, *supra* note 70, at 20–25; *see generally* JAMES GRIFFIN, WELL-BEING: ITS MEANING, MEASUREMENT, AND MORAL IMPORTANCE (1986).
[73] JEREMY BENTHAM, AN INTRODUCTION TO THE PRINCIPLES OF MORALS AND LEGISLATION 11 (J.H. Burns & H.L.A. Hart eds., 1996).
[74] *Id.* at 38.
[75] *See*, *e.g.*, PLATO, THE COLLECTED DIALOGUES OF PLATO 1088 (Edith Hamilton & Huntington Cairns eds., 1961) ("Of course the mere word 'pleasure' suggests a unity, but surely the forms it assumes are of all sorts and, in a sense, unlike each other. For example, we say that an immoral man feels pleasure, and that a moral man feels it too just in being moral; again, we say the same of a fool whose mind is a mass of foolish opinions and hopes; or once again an intelligent man, we say, is pleased just by being intelligent. Now if anyone asserts that these several kinds of pleasure are like each other, surely he will deserve to be thought foolish?").
[76] *Id.* at 1098.
[77] 2 JAMES MILL, ANALYSIS OF THE PHENOMENA OF THE HUMAN MIND 184 (Alexander Bain et al. eds., 2nd ed. 1878) ("I have one sensation, and then another, and then another. The first is of such a kind, that I care not whether it is long or short; the second is of such a kind that I would put an end to it instantly if I could; the third is of such a

experienced by intelligent beings, is at least implicitly apprehended as desirable . . . ."[78] But hedonic accounts are, as a class, subject to a putatively decisive objection, namely, that so far as our well-being is concerned, we may care about things other than mental states. This is famously illustrated by Robert Nozick's hypothetical of the experience machine.[79] Even if "[s]uperduper neurologists could stimulate your brain" so as to give you any experience you fancy, you would not choose to spend a lifetime in such a machine enjoying the feeling of "writing a great novel, or making a friend, or reading an interesting book."[80] This is because, "we want to *do* certain things, and not just have the experience of doing them."[81]

In contrast to hedonic accounts, desire-based (or preference-satisfaction) theories generally assert that a state of the world, *x*, is good for someone if and only if some desire (or preference) of hers is fulfilled in *x*. This assertion has to be qualified, however, for it is clear that people sometimes desire things that are not good, and actually bad, for them.[82] Moreover, individuals may come to adapt their preferences to their stations in life. As Amartya Sen vividly illustrates, "[t]he hopeless beggar, the precarious landless labourer, the dominated housewife, the hardened unemployed or the over-exhausted coolie" may come to "take pleasures in small mercies," but this does not make their condition any less deplorable.[83] Since actual desire could be tainted by errors of fact, failures in practical reasoning, and a general lack of insight, the desires that count must be confined to those that have been formed under idealized conditions.[84]

Moreover, the range of desire can extend widely, and not all such desires bear on an individual's well-being, especially if they are spatially or temporally distant.[85] A person may harbor a desire to see human beings colonize Mars. But it is highly questionable whether her well-being is truly advanced by such an occurrence, especially if it happens decades after her death.

Finally, objective list accounts hold that there is a plurality of goods that contribute to a person's well-being and that at least one of those goods is prudentially valuable for her regardless of her attitudes to, or evaluation of, it.[86] Objectively lists are usually constructed by reflecting on the kinds of things that make an individual's life go better for her:

> We imagine two possible lives for someone that are as much alike as possible except that one of these lives contains more of some candidate good than the other. We then think about whether the life containing more of the candidate good would be more beneficial to the person living it than the other life. If the correct answer is no, then definitely the candidate good in question is not an element of well-being.

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kind, that I like it prolonged. To distinguish those feelings, I give them names. I call the first Indifferent; the second, Painful; the third, Pleasurable.").

[78] HENRY SIDGWICK, THE METHODS OF ETHICS 127 (7th ed. 1907).

[79] ROBERT NOZICK, ANARCHY, STATE, AND UTOPIA 42–45 (1974).

[80] *Id.* at 42.

[81] *Id.* at 43.

[82] GRIFFIN, *supra* note 72, at 12–13; SUMNER, *supra* note 70, at 129–130.

[83] AMARTYA SEN, ON ETHICS AND ECONOMICS 45–46 (1987).

[84] GRIFFIN, *supra* note 72, at 14; SUMNER, *supra* note 70, at 130–31.

[85] GRIFFIN, *supra* note 72, at 16–17; SUMNER, *supra* note 70, at 125.

[86] *See* Brad Hooker, *The Elements of Well-Being*, 3 J. PRAC. ETHICS 15, 15 (2015).

> On the other hand, if the correct answer is instead that the life with more of the candidate good is more beneficial, then we inquire what is the right explanation of this life's being more beneficial. One possible explanation is that the candidate good in question really is an element of well-being.[87]

Performing this exercise, Brad Hooker identified "pleasure, friendship, significant achievement, important knowledge, and autonomy, but not either the appreciation of beauty or the living of a morally good life" as constitutive of well-being.[88] Other theorists have arrived at lists such as "virtue, pleasure, the allocation of pleasure to the virtuous, and knowledge[;]"[89] "life, knowledge, play, aesthetic experience, friendship, practical reasonableness, and religion[;]"[90] and "accomplishment," "the components of human existence," "understanding," "enjoyment" and "deep personal relations."[91]

Objective list theories have been dismissed as lists of things that are prudentially valuable, not a theory of prudential value.[92] But as others have pointed out, objective list theories also make "[the] claim that what it is to be intrinsically valuable for a person, to make that person's life go better for herself, is to be an item on that list."[93]

For CBA to serve as an indicator of overall well-being, it is not enough to be able to pick out "costs" and "benefits." We have to specify the account of well-being animating CBA. There is an argument (the "evidential view") that such a resort to high theory is unnecessary because (1) CBA only needs an enumeration of things that are good, and not an explanation of goodness,[94] and (2) preferences constitute evidence of the things that are good.[95] This second premise depends for its validity on two empirical assertions, i.e. that "[w]hen people are self-interested, their preferences will match what they believe will benefit them" and that "[people] are good judges of what will benefit them."[96] If both premises are true, then conventional CBA can identify the policies that advance well-being.

To evaluate these contentions, it is necessary to clarify the first premise. For CBA to inform regulation, it is not enough for some things to be classified as good, and hence as benefits, and others as bad (or involving the loss of a good), and hence as costs. CBA has to balance the former against the latter by monetizing benefits and costs, and this requires some knowledge of the degree of good-ness or bad-ness of these things. Hence, the first premise, more precisely formulated, is that CBA only needs to assess how good or how bad outcomes are; it does not need to articulate why. So stated, the first premise is unobjectionable. But this implies that the second premise cannot

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[87] *Id.* at 19.
[88] *Id.* at 15.
[89] DAVID ROSS, THE RIGHT AND THE GOOD 140 (Philip Stratton-Lake ed., 2d ed. 2003).
[90] JOHN FINNIS, NATURAL LAW AND NATURAL RIGHTS 90 (2nd ed. 2011).
[91] GRIFFIN, supra note 72, at 67–68.
[92] SUMNER, *supra* note 70, at 45.
[93] Richard J. Arneson, *Human Flourishing Versus Desire Satisfaction*, 16 SOC. PHIL. & POL'Y 113, 119 (1999).
[94] *See*, *e.g.*, ROGER CRISP, REASONS AND THE GOOD 102–03 (2006) (explaining the distinction between enumerative theories of well-being and explanatory ones).
[95] DANIEL M. HAUSMAN, PREFERENCE, VALUE, CHOICE, AND WELFARE 88–103 (2012).
[96] *Id.* at 89.

merely be that "[a person's] preferences may tell others what is good for [her]."[97] The strength of the preference must also track *how good* the thing that is preferred is. Put in these terms, the second premise loses some of its plausibility. I may develop a sudden craving for fried chicken and desire it immensely, but it is not obvious that the fried chicken, though perhaps good for me, is that much better for me than the salad I usually like.

This challenge to the evidential view is not an academic one.[98] Allegations of irrationality in regulation are frequently made on the basis of disparities in the costs incurred to save a statistical life. Stephen Breyer, for example, points to a 1992 study by the OMB "show[ing] variations ranging from space heater regulations that save lives at a cost of $100,000 per life saved to bans on [diethylstilbestrol] in cattle feed that require an expenditure of $125 million per statistical life," suggesting that "the nation could buy more safety by refocusing its regulatory efforts."[99] But as he himself later notes, these discrepancies "may reflect that the public fears certain risks more than others with the same probability of harm."[100] People appear to be "willing to pay a premium to avoid . . . deaths that are especially dreaded, uncontrollable, involuntarily incurred, and inequitably distributed."[101] Welfarist CBA needs a theory of prudential value to handle these preferences, to know whether to credit or disregard them.[102] To be sure, the contention need not be that preferences are a prefect proxy for well-being. The use of conventional CBA may be justified on the ground that preferences are the best proxy for well-being.[103] Examples of preferences that are inconsistent with judgements of well-being, however numerous, do not establish the inferiority of conventional CBA vis-à-vis other approaches. Still, the assertion that preferences are the best proxy for well-

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[97] *Id.* at 88.

[98] *Contra* Gil Hersch, *The Narrowed Domain of Disagreement for Well-Being Policy*, 32 PUB. AFF. Q. 1, 12 (2018) ("Yet a lot of the disagreements among competing philosophical theories in general, and of well-being in particular, only emerge in such hypothetical cases. Many of the counter examples that challenge different theories of well-being only arise in hypothetical cases, such as Robert Nozick's experience machine or John Rawls's blades of grass counter. But such cases tend to be irrelevant to well-being policy. This is not to say that they are not legitimate challenges to a theory that purports to be a correct theory of well-being. Rather, many of these challenges simply do not arise when restricting the scope of the debate only to cases that have policy relevance. Well-being policy need not be bothered by cases that go beyond the limits of practicality that public policy deals with.").

[99] BREYER, *supra* note 50, at 22.

[100] *Id.* at 33. *See also* CASS R. SUNSTEIN, VALUING LIFE 92–93 (2014) (arguing on grounds of autonomy that the value of a statistical life should vary across mortality risks).

[101] Cass R. Sunstein, *Bad Deaths*, 14 J. RISK & UNCERTAINTY 259 (1997).

[102] *Cf. id.* at 276 ("the valuation of life should not be based on a uniform number . . . but should instead incorporate different social judgments about different kinds of death, to the extent that these judgments can survive critical scrutiny."); Richard Revesz, *Environmental Regulation, Cost-Benefit Analysis, and the Discounting of Human Lives*, 99 COLUM. L. REV. 941, 947 (1999) (arguing for an upward adjustment of the value of a statistical life to account for dread); Matthew D. Adler, *Fear Assessment: Cost-Benefit Analysis and the Pricing of Fear and Anxiety*, 79 CHI.-KENT L. REV. 977, 981–982 (2004) (arguing that fear should be priced separately from the value of a statistical life).

[103] ADLER & POSNER, *supra* note 60, at 25 ("Cost-benefit analysis is a rough-and-ready proxy for overall well-being. It is an imperfect but practicable tool by which governmental decision-makers implement the criterion of overall welfare"). *See also* Richard J. Arneson, *Meaningful Work and Market Socialism Revisited*, 31 ANALYSE & KRITIK 139, 145 (2009) (recognizing one "cannot show that a proposed law or policy is unacceptable merely by pointing to an anomaly—a case in which the expectable application of the proposed law or policy would give rise to morally wrong results. You can defeat a proposed law or policy only by describing an alternative policy that would do a better job than the initial proposal at fulfilling to a higher degree the appropriately weighted goals that policy in this area ought to serve.").

being remains that—an assertion—unless we possess a true account of the value that conventional CBA and its alternatives are trying to measure.

Take, for instance, existence value.[104] CBAs of environmental regulations typically distinguish between use-value and non-use value. Use-value refers to the benefits that accrue from the actual use of an environmental resource.[105] Non-use value refers to all other benefits and they, in turn, may be classified as having option value or existence value.[106] Option value is the value of having the resource available for use at some indeterminate time in the future.[107] Existence value is the value of the resource being there, independent of any present or potential use.[108] To illustrate, the use-value of conserving the natural habitat of humpback whales in Hawaii derives, among other things, from the pleasure that nature lovers take in admiring these elusive mammals.[109] Conservation has option value for those who might wish to partake in whale-watching one day. And it has existence value because some people are gratified by "knowing that whales exist, even if they never intend to visit Hawaii to view humpback whales."[110]

Though the appearance of existence value in rulemaking is relatively recent,[111] its invocation by government agencies has become increasingly common.[112] Yet, the monetization of existence value is normatively fraught, and not just for the reasons that some economists cite, *viz.* that appraisals of existence value are, and can only be, founded on non-market behavior.[113] For existence value to register on a welfarist CBA, it must contribute to well-being. There have been attempts at such a claim.[114] One thought is that "[p]eople may value diverse habitats and diverse

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[104] See the related discussions in HAUSMAN, *supra* note 95, at 91–92 and ADLER & POSNER, *supra* note 60, at 126–27.
[105] ADLER & POSNER, *supra* note 60, at 126.
[106] *Id.*
[107] *Id.*
[108] HAUSMAN, *supra* note 95, at 92.
[109] NAT'L MARINE FISHERIES SERV., ENVIRONMENTAL ASSESSMENT FOR APPROACH REGULATIONS FOR HUMPBACK WHALES WITHIN 200 NAUTICAL MILES OF THE ISLANDS OF HAWAII 74 (July 2016), https://www.regulations.gov/contentStreamer?documentId=NOAA-NMFS-2016-0046-0005&contentType=pdf.
[110] *Id.*
[111] ADLER & POSNER, *supra* note 60, at 126 (giving the date as 1991).
[112] Most strikingly, the Department of Justice has considered crime to have "an 'existence value' separate and apart from its impact on its victims" because "it is worth something to people to know that they live in a crime-free (or crime-reduced) society" and "[i]t is also worth something to people to know that their loved ones who are incarcerated, or who might face incarceration some day, are less likely to be raped during their confinement." U.S. DEP'T OF JUST., INITIAL REGULATORY IMPACT ANALYSIS FOR THE PROPOSED NATIONAL STANDARDS TO PREVENT, DETECT, AND RESPOND TO PRISON RAPE UNDER THE PRISON RAPE ELIMINATION ACT 22 (Jan. 24, 2011), https://ojp.gov/programs/pdfs/prea_nprm_iria.pdf.
[113] *See*, *e.g.*, Donald H. Rosenthal & Robert H. Nelson, *Why Existence Value Should* Not *Be Used in Cost-Benefit Analysis*, 11 J. POL'Y ANALYSIS & MGMT. 116, 117 (1992) ("even a single existence value is very difficult to measure accurately in practice" and "[e]stimates of existence value depend heavily on the circumstances in which consumers are asked to give their evaluations"). *See also* ADLER & POSNER, *supra* note 60, at 126 ("One reason for hesitation about calculating existence values was no doubt methodological. Existence values cannot be inferred from market behavior, but must be derived from costly and controversial surveys.").
[114] *See*, *e.g.*, David A. Dana, *Existence Value and Federal Preservation Regulation*, 28 HARV. ENVTL. L. REV. 343, 345 (2004) ("Some, perhaps many, Americans lose some sense of well-being simply by virtue of the loss of the existence of wetlands, waterways, and other natural resources in states where they do not live.").

wildlife intrinsically because of moral or spiritual/religious convictions about nature and the inherent worth of non-human entities."[115] Because of that, they can be "harm[ed]" by the destruction of a natural resource, over and above any losses that they suffer from being unable to enjoy the resource. Another thought is that people "may derive psychic satisfaction, a sense of heightened well-being, from the existence of certain natural resources even though they have no conscious moral or spiritual values regarding those resources."[116] These arguments are unavailing.

One might ask "why the value derived by birdwatchers from bird watching, but not the value derived by non-birdwatchers from knowing that birds continue to exist, should 'count' in the determination of public policy."[117] If the satisfaction of any desire makes the desirer better off, then accounting for existence value in CBA simply recognizes the fact that some members of society desire the conservation of an environmental resource for its own sake. But desire-based (and objective list) accounts are embarrassed by exactly this kind of scenario. It strains our ordinary understanding of well-being to claim that the mere existence of an environmental resource can make an individual's life better for her. The fact that these desires stem from moral or spiritual beliefs does not make a difference. A moral agent acting out of conviction does not aim at making herself better off,[118] and the notion of a voluntary sacrifice is only coherent if one can desire something that does not have prudential value for oneself.

Certainly, there are exceptional circumstances. An environmental activist who has devoted her entire life to, say, protecting the ecosystem of Prince William Sound, could be said to be made worse off by the destruction wrecked by the *Exxon Valdez*. But current estimates of existence value cannot be defended on these grounds. This is because contingent valuation surveys, as fielded,

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[115] *Id.* at 348. *See also* Eric A. Posner & Cass R. Sunstein, *Moral Commitments in Cost-Benefit Analysis*, 103 VA. L. REV. 1809, 1830 (2017) (arguing that "when regulators conduct cost-benefit analysis, they should include valuations that reflect the welfare loss that people experience if their moral commitments are not vindicated").

[116] *Id. See also* U.S. ENVTL. PROT.AGENCY, ENVIRONMENTAL AND ECONOMIC BENEFIT ANALYSIS OF PROPOSED REVISIONS TO THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM REGULATION AND THE EFFLUENT GUIDELINES FOR CONCENTRATED ANIMAL FEEDING OPERATIONS 3-2, https://www.regulations.gov/document?D=EPA-HQ-OECA-2009-0274-0166 (describing existence value as "the sense of well-being that people derive from the existence of . . . resources, even when they do not expect to see or use these resources"); John V. Krutilla, *Conservation Reconsidered*, 57 AM. ECON. REV. 777, 779 (1967) (suggesting that for some individuals, such as "the spiritual descendants of John Muir, the present members of the Sierra Club, the Wilderness Society, National Wildlife Foundation, Audubon Society and others to whom the loss of a species or the disfigurement of a scenic area causes acute distress and a sense of genuine relative impoverishment").

[117] Dana, *supra* note 114, at 349. Richard Posner makes a (superficially) similar point: "Suppose someone who does not expect to benefit from preserving the existing number of species nevertheless believes, perhaps as a matter of religious conviction, that it is wrong to allow a species to become extinct as a consequence of human activity; and he backs up his conviction with his money by making charitable contributions from which his implicit, and positive, valuation of species preservation can be inferred and even monetized with adequate objectivity to be incorporated into a cost-benefit analysis." However, since Posner believes that the justification for CBA has to be "pragmatic rather than foundational," he, unlike Dana, does not try (or have) to tie existence value to well-being. *See* Posner, *supra* note 65, at 1168.

[118] MARK SAGOFF, PRICE, PRINCIPLE, AND THE ENVIRONMENT 47 (2004) ("Beliefs are not benefits . . . A person who wants the Park Service to respect hallowed ground may consider that policy justified by the qualities of the battlefield itself and not by welfare consequences for her or him.").

generally ask respondents for their willingness-to-pay (WTP) for a stated policy; it does not ask them for their WTP for the gain in well-being brought about by that policy.[119]

Hedonic accounts might, perhaps, furnish a foundation for existence values. Insofar as one experiences pleasure at the thought that a particular environmental resource exists, existence value can be defined by the amount and intensity of this pleasure. But if this is so, then economists have been going about their task in either a confused or a clumsy fashion. Instead of asking individuals what they are willing to pay to save the environmental resource, the economist should first estimate the statistical distribution of the number of times a person recalls, or is reminded of, the environmental resource. The economist should then seek to measure the changes in positive/negative affect occasioned by such thoughts, being careful to distinguish, if she can, between the pleasure derived from belief that the environmental resource is still in existence and pleasure that is not, such as that derived from reminiscences. So evaluated, it is difficult to believe that existence value can be anything but *de minimis* for all but a few individuals.

Moreover, although objective lists are not in especially short supply, existence value is scarcely to be found in many of them. For example, it is not obvious how the Yosemite National Park, by virtue of its existence alone, enhances "pleasure, friendship, significant achievement, important knowledge, or autonomy."[120] Concededly, there are some objective lists that acknowledge the environment as an element of well-being. For example, Martha Nussbaum includes in the ten "central human capabilities" a heading of "other species": "being able to live with concern for and in relation to animals, plants, and the world of nature."[121] This capability does not, however appear to be impaired by the despoliation of an isolated environmental resource that is far removed from a person's senses and experiences.[122] And even if "being able to live with concern for" the environment is a central human capability that grounds existence value, it is unclear why WTP is the best metric for determining the relative prudential value of goods in an objective list.

In sum, the assertion that preferences are the best proxy for well-being cannot be tested in the absence of a theory of well-being.

2.1.2 Liberal Neutrality and the Preference Satisfaction State

Welfarist CBA needs an account of well-being. Yet, there is reasonable disagreement about the nature of prudential value. Some maintain that well-being ultimately inheres in sensations.[123] Others hold that all said and done, well-being consists in having one's desires satisfied.[124] And

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[119] For articulations of this view, see *id.* at 46 and HAUSMAN, *supra* note 95, at 98.
[120] *Cf.* Hooker, *supra* note 86, at 15.
[121] MARTHA C. NUSSBAUM, FRONTIERS OF JUSTICE: DISABILITY, NATIONALITY, SPECIES MEMBERSHIP 76–78 (2006).
[122] *Cf.* Breena Holland, *Justice and the Environment in Nussbaum's "Capability Approach,"* 61 POL. RES. Q. 319, 322–23 (2008) ("In holding that animals, plants, and particular natural places enable people to have relationships that are central to living a good human life, Nussbaum treats these components of the natural environment as instrumentally valuable to one of the human capabilities that she designates as centrally important to living a dignified human life.").
[123] PARFIT, *supra* note 72, at 493–94.
[124] *Id.* at 494.

still others insist that well-being has a plurality of irreducible elements, and that some of these elements have prudential value for the individual, even if she does not apprehend them as such.[125] Yet CBA, as executed by agencies and defended by its most ardent supporters, seem to be largely built on a desire satisfaction account. The developments of the last decades have not only instituted a cost-benefit state; they have also ushered in a preference-satisfaction one.

The preference-satisfaction state, however, seems at first blush to blatantly violate one of the tenets of liberalism: neutrality. In its "canonical"[126] formulation, liberal neutrality is the principle that "government must be neutral on what might be called the question of the good life."[127] More explicitly, "political decisions must be, so far as is possible, independent of any particular conception of the good life, or of what gives value to life."[128]

Theorists in the liberal tradition have distinguished between neutrality of effect, neutrality of aim, and neutrality of justification.[129] The first, neutrality of effect, enjoins state action that has the consequence of making one conception of the good easier to attain than another.[130] This interpretation of neutrality is widely rejected because of its over-inclusiveness: it seems to completely rule out any state action and, in its broader version, any state inaction.[131] The second, neutrality of aim, forbids the state from seeking to advance one conception of the good over others while the third, neutrality of justification, excludes certain types of reasons—ones based on a particular conception of the good—from the public sphere.[132]

The correct or best interpretation of neutrality cannot be settled by intuition alone, and must instead depend on the argument for neutrality.[133] Neutrality may be based on skepticism about the possibility of knowledge. Since no conception of the good can be demonstrated to be true, the state should not step into the epistemological fray by elevating one ideal over another.[134] The case for neutrality may also be made in terms of legitimacy. Such articulations of liberal neutrality usually start from the assertion that while individuals may order their own affairs according to their own beliefs, the mobilization of the coercive resources of the state can only be justified by an appeal to

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[125] *Id.*

[126] Richard J. Arneson, *Liberal Neutrality on the Good: An Autopsy*, *in* PERFECTIONISM AND NEUTRALITY: ESSAYS IN LIBERAL THEORY 196 (Steven Wall & George Klosko eds., 2003).

[127] RONALD DWORKIN, A MATTER OF PRINCIPLE 191 (1985).

[128] *Id.*

[129] Arneson, *supra* note 126, at 193. *See also* Richard J. Arneson, *Neutrality and Utility*, 20 CAN. J. PHIL. 215, 217–19 (1990) (explaining the distinction between outcome neutrality, neutrality of aim, and neutrality of procedure).

[130] Arneson, *supra* note 126, at 193.

[131] *See*, *e.g.*, JONATHAN QUONG, LIBERALISM WITHOUT PERFECTION 18 (2010) (clarifying that "the issue . . . is not whether the actions of the state can ever have the *effect* of promoting some perfectionist ideals over others. It is both unrealistic and undesirable for the liberal state to be neutral in this way. The question instead refers to the reasons that *justify* state action.").

[132] Arneson, *supra* note 126, at 193.

[133] *See* JEREMY WALDRON, LIBERAL RIGHTS: COLLECTED PAPERS 1981–1991, 151–52 (1993).

[134] BRUCE A. ACKERMAN, SOCIAL JUSTICE IN THE LIBERAL STATE 10–12 (1980); 2 BRIAN BARRY, JUSTICE AS IMPARTIALITY 169 (1995). But this is a shaky foundation for neutrality: there is no reason for neutrality to be spared from the skepticism that afflicts moral claims. *See* WALDRON, *supra* note 133, at 152; George Klosko, *Reasonable Rejection and Neutrality of Justification, in* PERFECTIONISM AND NEUTRALITY: ESSAYS IN LIBERAL THEORY 173–74 (Steven Wall & George Klosko eds., 2003).

impartial reasons.[135] In its most stringent form, these reasons have to be ones that all reasonable citizens can accept. Additionally, neutrality could be implied by equal respect.[136] The state fails to treat its citizens equally if, in the face of deep disagreement, it privileges the beliefs or values of the one set of citizens by making it easier for them, as compared to others, to realize their conception of the good. The argument from skepticism inclines towards neutrality as to intentions while the argument from equal respect leans towards neutrality as to outcomes.[137]

Welfarist CBA is not neutral as to outcome. Although some defenders of CBA entertain reservations about it as a decision rule, preferring, instead, to cast it as a decision procedure,[138] CBA nevertheless influences regulation by advocating one policy over another.[139] Moreover, the choice of a particular theory of well-being on which to rest CBA has predictable consequences on the policies that it will recommend. The use of hedonic data, as opposed to WTP, for instance, is likely to favor efforts to reduce unemployment, especially if happiness is conceived of as life satisfaction rather than moment-by-moment affect.[141]

Neither, it seems, can welfarist CBA be neutral as to intentions. As Charles Larmore reminds us, "[l]iberals have not always grasped the degree of impartiality that the ideal of procedural neutrality requires" and "a lack of neutrality . . . may lie concealed in what appears to be a purely formal principle."[142] Classical utilitarianism's formula of maximizing pleasure for the greatest number, for example, is partial to a conception of the good that that privileges subjective experiences over genuine achievements.[143] It "force[s] many to understand the value of what they pursue in a manner alien to what makes it of value to them."[144] The same objection has equal force, whether CBA is motivated by a hedonic account of well-being[145] or by a "restricted, preference-based" [146] one.[147]

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[135] *See*, *e.g.*, CHARLES LARMORE, PATTERNS OF MORAL COMPLEXITY 45 (1987) (observing that "for the liberal, neutrality is a *political* ideal": "[t]he state's policies and decisions must be neutrally justifiable, but the liberal does not require that other institutions in society operate in the same spirit").

[136] DWORKIN, *supra* note 127, at 203; Alan Patten, *Liberal Neutrality: A Reinterpretation and a Defense*, 20 J. POL. PHIL. 249, 271 (2011).

[137] WALDRON, *supra* note 133, at 152.

[138] *See, e.g.*, ADLER & POSNER, *supra* note 60, at 68–73.

[139] Cost-benefit analysis may also have an effect on policymaking that is independent of its content. The imposition of CBA on administrative agencies may be a way of having them regulate only if the costs of conducting the CBA exceed the net benefits of the regulation to the agency and thereby aligning the agency's incentives to the principal's interests. *See* Matthew C. Stephenson, *A Costly Signaling Theory of "Hard Look" Judicial Review*, 58 ADMIN. L. REV. 753, 754–55 (2006).

[141] ED DIENER ET AL., WELL-BEING FOR PUBLIC POLICY 160–65 (2009); JOHN BRONSTEEN ET AL., HAPPINESS & THE LAW 19–20, 41–42 (2015).

[142] LARMORE, *supra* note 135, at 48.

[143] *Id.*

[144] *Id.* at 49.

[145] *See* BRONSTEEN ET AL., *supra* note 141, at 43.

[146] *See* ADLER & POSNER, *supra* note 60, at 35.

[147] *See also* Daniel M. Haybron & Valerie Tiberius, *Well-Being Policy: What Standard of Well-Being?*, 1 J. AM. PHIL. ASSOC. 712, 718–19 (2015) (describing as "inherently paternalistic" governmental endorsements of a particular conception of the good, "even if it does not strictly infringe individuals' pursuit of the good as they see it").

It might be thought that the preference satisfaction state does not have to endorse a theory of the good. Preference satisfaction may be simply a "metric for amalgamating diverse conceptions of what is worth seeking in life on a common scale."[148] Alternatively, the state advances well-being while respecting the right of individuals to arrange their own affairs by making people's lives better as judged by themselves.[149] On these views, neutrality is not violated if policy bends towards the satisfaction of desires. This is because the state does not have to espouse preferentism as the true account of prudential value; deference to preferences leaves it to the individual to define her own notion of well-being.[150]

This reconciliation is, however, an uneasy one as people can be mistaken about what is good for them. If uncorrected, these mistakes vitiate, and may even destroy, the nexus between preference satisfaction and well-being. But undertaking to correct them requires commitment to some conception of the good. Those who believe that they can have their cake and eat it as far as welfarism and neutrality are concerned are likely to downplay the prevalence and gravity of such mistakes.[151] There is, so the argument goes, no dispute about many the things that conduce to well-being, and this consensus relegates the difficulties that mistakes raise for a welfarist, yet neutral, justification for CBA to the status of "largely theoretical."[152] As Daniel Haybron and Valerie Tiberius state it,

> [h]owever obtuse some individuals' values might prove to be, large swaths of the public are not likely to be indifferent to whether they are healthy or unhealthy, happy or unhappy, and so forth. Policies that promote such homely values will very likely tend to promote well-being, whatever the correct theory.[153]

Fair enough, but once again, the challenge is to say whether a policy that trades off one of these values for another enhances overall well-being or not. Because such trade-offs are ubiquitous in regulatory affairs, this issue cannot simply be acknowledged before being brushed aside.

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[148] Arneson, *supra* note 129, at 232.
[149] Haybron & Tiberius, *supra* note 147, at 719. *See also* SUNSTEIN, *supra* note 100, at 93 (offering an "autonomy" argument for CBA: "[i]f regulators do not use people's actual judgments, then they are insulting their dignity."). Fleurbaey describes some of the implications of such a view for a measure of well-being, concluding that there are approaches that are more faithful to individual preferences than the subjective indicators that have recently become fashionable in the policy arena. Marc Fleurbaey, *The Importance of What People Care About*, 11 POL. PHIL. & ECON. 415, 440 (2012).
[150] Note, however, that Daniel Haybron and Valerie Tiberius endorse deference to values, not "mere" preferences. The former are "robust preferences that the agent sees as grounding reasons for her," and seem to constitute a subset of higher order preferences. Haybron & Tiberius, *supra* note 147, at 724. *See also* David Pearce, *Cost-Benefit Analysis and Environmental Policy*, 14 OXFORD REV. ECON. POL'Y 84, 87 (1998) ("WTP and WTA are measures of human preference. That human preferences should count and be 'sovereign' is the fundamental value judgement in CBA.").
[151] *See*, *e.g.*, Haybron & Tiberius, *supra* note 147, at 721 (claiming that "in general, individuals' personal welfare values probably tend not to be radically mistaken").
[152] *Id.* at 722.
[153] *Id.*

To be clear, I do not claim to have proved either that neutrality is entailed by a commitment to liberal democracy, or that welfarist CBA cannot be rendered neutral.[154] I hope, however, to have at least highlighted some of the obstacles that proponents of welfarist CBA must confront and overcome.

2.2 Two Other Interpretations of CBA

If CBA improves regulation by serving as an indicator of overall well-being, then its practice ought to be reformed. A dollar means more to the poor than to the rich. CBA conducted by administrative agencies should therefore demonstrate sensitivity to heterogeneity in the marginal utility of money by, for example, weighting WTPs. Moreover, the approach taken by contingent valuation surveys to the measurement of existence value has to be revised. The amount individuals are willing to pay to, for example, save the snail darter from extinction is a crude measure of the prudential value that accrues to them from the continued existence of that species.[155] On any plausible desire satisfaction theory of well-being, economists should invite individuals to imagine the goodness of their lives in the absence of the snail darter—independent of all uses it might have—before articulating the amount of money that makes them indifferent between that hypothetical state of affairs and the *status quo*.[156] Alternatively, if some hedonic theory of well-being is correct, economists should measure the decline in life satisfaction or moment-to-moment affect that results from the permanent loss of the snail darter, once again, net of all uses that it might be put to. This methodological proposal, unlike some others, cannot be rejected on the rationale that it is too costly or impractical for administrative agencies to implement.

Yet, distributional weights have largely been eschewed by administrative agencies in the United States.[157] And contingent valuation studies continue to ask respondents what they would be willing to pay for the existence of an environmental resource, rather than what they would be willing to pay for the benefit they gain from such existence. This suggests another possibility: to affirm CBA as it is practiced while interpreting CBA differently. What could CBA be, if not welfarist?

2.2.1 Replicative CBA

CBA can also be an instrument for replicating outcomes that would have arisen through other means, whether it is the perfectly competitive market, clean debate in an open forum, or grubby dealing behind closed doors.

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[154] One solution might be to have administrative agencies prepare a CBA for each reasonable, and actually held, theory of the good.

[155] *Cf.* TVA v. Hill, 437 U.S. 153, 187–88 (1978).

[156] *See*, *e.g.*, SAGOFF, *supra* note 118, at 46 ("Since CV questionnaires in fact ask nothing about benefits, responses to them tell us nothing relevant to economic valuation."); HAUSMAN, *supra* note 95, at 98 ("If willingness to pay to protect the environment does not reflect people's expectations of the extent to which they will benefit from environmental preservation, one can ask people how much they expect to benefit rather than what they are willing to pay.").

[157] Matthew D. Adler, *Benefit-Cost Analysis and Distributional Weights: An Overview*, 10 REV. ENVTL. ECON. & POL'Y 264, 264 (2016) (stating that such weights are "rarely if ever" used by administrative agencies in the United States).

Approximating free market outcomes is, perhaps, the most familiar instance of replicative CBA. This conception of CBA is normally associated with the view that governments ought to intervene only in cases of market failure. When markets suffer from some imperfection, the allocation of resources that results from optimizing behavior by economic actors may not be Kaldor-Hicks efficient. That is to say, there may exist another distribution of resources that is so favored by some over the existing one that they could fully compensate, in monetary units, those who disfavor it and still be better off as judged by themselves. The task of CBA, then, is to help achieve Kaldor-Hicks efficiency through regulation by comparing and equating marginal social cost to marginal social benefit, cost and benefit being understood in terms of WTP and/or willingness-to-accept (WTA). This objective is also loosely referred to as wealth maximization in the law and economics literature.[158] Since strict adherence to a standard of Kaldor-Hicks efficiency in this context does not require attention to either the marginal utility of money or distributional issues such as fairness and equality, the use of weights in CBA is neither necessary nor advisable. Of course, the single-minded pursuit of Kaldor-Hicks efficiency has to be defended. Although a comprehensive treatment of this subject is beyond the scope of this Article, one might defend wealth maximization by invoking the superiority of the tax system as an instrument for redistribution. Briefly, the idea is that while redistribution through regulation or tax reduces the marginal return to labor and hence distorts the incentives to work, regulation introduces additional economic inefficiencies into the activities it targets.[159] Moreover, the attributes of those who gain or lose from a regulation may only be tenuously related to the attributes of those who are meant to be advantaged or disadvantaged by redistribution.[160] Thus, it is better, as a matter of institutional design, for administrative agencies (and courts) to focus solely on maximizing wealth.[161] CBA assists in that endeavor by replicating free market outcomes.

But CBA may also be used to replicate other processes. Consider, for example, regulatory choices that are the product of interest group politics. According to public choice theory, interest groups do not pursue the social good, seeking instead to advance the narrow, sectarian, interests of their members.[162] As interest groups are generally able to overcome the coordination and free-rider problems that afflict the public, they are able to mobilize disproportionately more resources in favor of their cause and thereby exert an outsized influence over the regulatory process. CBA, as I have defined it, can be carried out to replicate the results of such competition. For example, one could postulate a political welfare function (as opposed to a social welfare function) that

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[158] *See* RICHARD A. POSNER, THE ECONOMICS OF JUSTICE 61 (1981) (defining the "wealth of society" as "the aggregate satisfaction of those preferences . . . that are registered in a market," though the market "need not be an explicit one" and can be "hypothetical"); Richard A. Posner, *The Ethical and Political Basis of the Efficiency Norm in Common Law Adjudication*, 8 HOFSTRA L. REV. 487, 491 (1980); Richard A. Posner, *Utilitarianism, Economics, and Legal Theory*, 8 J. LEGAL STUD. 103, 119–20 (1979). *See also* Jules L. Coleman, *Efficiency, Utility, and Wealth Maximization*, 8 HOFSTRA L. REV. 509, 521 (1980) (making a distinction between "tests for ordering or ranking states of affairs" and "the characteristic[s] in virtue of which the states of affairs are to be ranked," one that has been suppressed here); Ronald M. Dworkin, *Is Wealth a Value?*, 9 J. LEGAL STUD. 191, 191–92 (1980).

[159] Louis Kaplow & Steven Shavell, *Why the Legal System is Less Efficient than the Income Tax in Redistributing Income*, 23 J. LEGAL STUD. 667, 667–68 (1994).

[160] *Id.* at 674–75.

[161] For a sophisticated version of this argument see David A. Weisbach, *Distributionally Weighted Cost-Benefit Analysis: Welfare Economics Meets Organizational Design*, 7 J. LEGAL ANALYSIS 151 (2015). *But see* Lee Anne Fennell & Richard H. McAdams, *The Distributive Deficit in Law and Economics*, 100 MINN. L. REV. 1051 (2016).

[162] Max H. DeLeon, *Public Choice Theory, Interest Groups, and Tort Reform*, 5 ILL. L. REV. 1787, 1790 (2012).

"reflects not just the government's concern for the well-being of individuals but also the weight it attaches to the well-being of particular interest or pressure groups, the support of which the decision maker needs to stay in power or realize some policy proposal."[163] A decision maker's adoption of a political welfare function in the cadre of CBA does not have to be purely cynical. The political welfare function may simply be a pragmatic device for obtaining a *n*-th best solution that stays within the constraints of political reality.[164] By replicating political contestation, CBA helps ensure that the policy that is eventually selected garners sufficient buy-in so as to be actualized.

Consider, also, regulatory choices that have been made after democratic deliberation. The deliberative ideal is desirable because it "promote[s] the legitimacy of collective decisions[,]" "encourage[s] public-spirited perspectives on public issues[,]" "promote[s] mutually respectful processes of decision-making[,]" and "help[s] correct . . . mistakes."[165] Yet, it is patently infeasible for all citizens to deliberate about every rule that society seeks to impose. One solution is to randomly select a subset of citizens to act as deliberators for each rule.[166] Although some citizens are, by design, excluded from the deliberative arena, this defect might be cured by the representativeness of the deliberators of the citizenry at large.

Another solution is to have citizens deliberate about the parameters of a decision-making mechanism. Take the "deliberative turn" in contingent valuation research.[167] The Contingent Valuation Method (CVM) is a stated preference method that involves asking individuals about their WTP for a good and has traditionally been employed to discover preferences for goods that are not traded on any market.[168] Deliberation, in this setting, can be either diagnostic or constructive.[169] Deliberation is diagnostic if it provokes individuals to reflect on their pre-existing inclinations and thereby articulate more informed and critical preferences.[170] On this understanding, deliberation at the monetization stage is an antidote for the cognitive deficiencies

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[163] Giles Atkinson & Susana Mourato, *Environmental Cost-Benefit Analysis*, ANN. REV. ENV'T & RESOURCES 317, 335–36 (2008).
[164] *See* David Pearce, *The Political Economy of an Energy Tax: The United Kingdom's Climate Change Levy*, 28 Energy Econ. 149, 150 (2006).
[165] AMY GUTMANN & DENNIS THOMPSON, WHY DELIBERATIVE DEMOCRACY? 10–12 (2004). *See also* Joshua Cohen, *Deliberation and Democratic Legitimacy*, *in* THE GOOD POLITY: NORMATIVE ANALYSIS OF THE STATE 17–18 (Alan Hamlin & Philip Petit eds., 1989).
[166] The practical implementation of this scheme is expounded in greater detail in Jennifer Nou, Note, *Regulating the Rulemakers: A Proposal for Deliberative Cost-Benefit Analysis*, 26 YALE L. & POL'Y REV., 601, 618–21 (2008).
[167] *See*, *e.g.*, Thomas C. Brown et al., *The Values Jury to Aid Natural Resource Decisions*, 71 LAND ECON. 250, 253–54 (1995); Clive L. Spash, *Deliberative Monetary Valuation and the Evidence for a New Value Theory*, 84 Land Econ. 469, 469 (2008); Matthew A. Wilson & Richard B. Howarth, *Discourse-Based Valuation of Ecosystem Services: Establishing Fair Outcomes through Group Deliberation*, 41 ECOLOGICAL ECON. 431, 432 (2002).
[168] Brown, *supra* note 167, at 250; Wilson & Howarth, *supra* note 167, at 434.
[169] Mark Sagoff, *Aggregation and Deliberation in Valuing Environmental Public Goods: A Look Beyond Contingent Pricing*, 24 ECOLOGICAL ECON. 213, 221–23 (1998); *See generally* Spash, *supra* note 167. (distinguishing between features of deliberative monetary valuation that address internal critiques of contingent valuation, e.g. that individuals are unfamiliar with the environmental goods they are being asked to value, and justifications of deliberative monetary valuation that address external critiques of contingent valuation, e.g. that individuals are asked to treat environmental goods as market commodities, in their capacities as consumers).
[170] Sagoff, *supra* note 169, at 221.

that undermine the neo-classical model of the economic agent.[171] The conception of democracy that deliberation serves, however, remains a welfarist one. WTPs are taken as evidence of well-being and summed so as to determine the policy that best advances overall well-being. Of greater interest to us here, however, is the constructive face of deliberation. Deliberation can foster "considered judgement, which may guide policy makers more as a recommendation than as a kind of evidence."[172] The WTPs that emerge from this discursive exchange of reason constitute a "[collective view] about the value society ought to place on certain resources and the extent to which society as a whole should invest in those goods rather than other public goods and services."[173] These WTPs do not have to be grounded in any one ethical theory and may instead represent "workable agreements"[174] or "incompletely theorized agreements."[175]

WTPs that are born out of constructive deliberation, if used to monetize costs and benefits in future CBAs, result in outcomes that replicate—in some sense to be explained—deliberated ones. Certainly, reliance on deliberated WTPs elicited for a prior CBA in a later CBA does not guarantee that the conclusion of the latter is the one that would have been adopted had deliberation also occurred there. This is because there is no theoretical foundation for the claim that there are, as it were, "true" WTPs that different panels of citizen deliberators converge on.[176] Moreover, there is an argument—labelled "the holism of reasons"—that the strength and even valence of reasons can vary from situation to situation.[177] A reason for action in one circumstance can be no reason at all in another.[178] If so, then the transplantation of WTPs that have emerged from deliberation in a different context from the one at issue risks error, even if we assume that there are "true" WTPs and that citizen deliberators always arrive at them. Still, the use of these deliberated WTPs in CBA may be thought to confer some degree of legitimacy on the undeliberated decision and it is in this sense that CBA replicates deliberated outcomes.

Whether it is the maximization of wealth through the market, the rough and tumble of interest group politics, or the give and take of democratic deliberation that is being emulated through CBA, there is nothing inherent to replication that imposes interpretive or structural constraints on CBA.[179] For example, WTPs do not have to be susceptible of meaning, like they do

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[171] *See*, *e.g.*, Amos Tversky & Daniel Kahneman, *Judgment Under Uncertainty: Heuristics and Biases*, 185 SCIENCE 1124, 1124 (1974).
[172] Sagoff, *supra* note 169, at 221.
[173] *Id.* at 226.
[174] JOHN S. DRYZEK, DELIBERATIVE DEMOCRACY AND BEYOND: LIBERALS, CRITICS, CONTESTATIONS 48 (WILL KYMLICKA ET AL. EDS., 2000).
[175] Cass R. Sunstein, *Incompletely Theorized Agreements*, 108 HARV. L. REV. 1733, 1738 (1995).
[176] For some empirical evidence, *see, e.g.* Dietz, et al. (2009) (concluding that the variance in WTPs between deliberative groups is not statistically different from the variance in WTPs between simulated groups of survey respondents).
[177] *See*, *e.g.*, JONATHAN DANCY, ETHICS WITHOUT PRINCIPLES 73–75 (2004).
[178] *See*, *e.g.*, *id*. at 19 (2004). An example that Jonathan Dancy credits to John Tasioulas concerns mercy: "[r]easons to be merciful with respect to the administration of punishment presuppose reasons (of justice) to punish in the first place. It makes no sense to say of someone that they showed 'mercy' to another, when in fact there was no reason to punish them to begin with." *Id.* at 19.
[179] There are more examples of replicative CBA. Robert Cooter and David DePianto's suggestion that the "community value" of a life be adopted as the appropriate standard for determining tort damages and for assessing regulation would transform conventional CBA from an exercise in determining the consequences of a rule on overall

in the case of welfarist CBA, and it is acceptable for benefits to be discounted one way and costs another. Since the goal is replication, the only thing that matters is accuracy and/or faithfulness. That means, in the case of interest group politics, that CBA identify, as accurately as possible, the policy that is, among other things, palatable to important constituencies and, in the case of deliberative democracy, that CBA be faithful to the numbers that have been ratified by citizen deliberators.[180] On these views, the consideration of existence value by administrative agencies can be understood as a concession to the political clout of environmental groups or as a compromise forged after decades of struggle inside and outside of Congress.

2.2.2 Rationalizing CBA

Finally, CBA can be used to rationalize a decision. This conception of CBA is usually articulated as criticism rather than praise.[181] But CBA could at least confirm that the course of action being pursued is justified under some set of beliefs. The notion of rationalizability is, for instance, used in game theory to impose less strenuous demands on the knowledge of rational agents.[182] Take the situation of a couple who have decided to go on a date but who, unfortunately, lost touch before they could agree whether to go to a boxing match or to the opera.[183] Although their primary desire is for each other's company, the woman enjoys boxing matches more than opera while the man has the opposite predilection. Their preferences over potential outcomes is captured by the following matrix:

	Boxing	Opera
Boxing	2, 1	0, 0
Opera	0, 0	1, 2

well-being to one that strives to reproduce a community's judgments as expressed through its norms. *See* Robert Cooter & David DePianto, *Community Versus Market Values of Life*, 57 WM & MARY L. REV. 713, 741 (2016).

[180] One might maintain that there has to be conditions on the outcomes of deliberation for them to be attributed to a collectivity, conditions such as coherence. For instance, the discounting of benefits but not costs appears, in the absence of any further argument, to be more of an *ad hoc* compromise than the articulation of a public will. This objection has some force as applied to a particular CBA, but it does not detract from the assertion that replicative CBA is not subject to any internal constraints. Insofar as there are constraints, these constraints are external to replicative CBA.

[181] Daniel H. Cole, *Law, Politics, and Cost-Benefit Analysis*, 64 ALA. L. REV. 55, 57 (2012) (as "CBA inevitably requires value judgments that are inherently subjective," "the analyses [are] potentially manipulable for political ends."); *see* Amy Sinden, Douglas A. Kysar & David M. Driesen, *Cost-benefit analysis: New foundations on shifting sand*, 3 REG. & GOVERNANCE 48, 59 (2009) (the "extreme level of indeterminacy means that . . . agency personnel can always manipulate the numbers to reach a politically motivated result"). *See also* Matthew D. Adler & Eric A. Posner, *Rethinking Cost-Benefit Analysis*, 109 Yale L.J. 165, 172 (1999) ("But for all their enthusiasm for CBA, it is not clear that agencies use the textbook version. Agencies sometimes appear to use CBA to rationalize decisions made on other grounds. At other times, agencies may be sincere, but depart from CBA without explaining their departure.") (citation omitted); Michael A. Livermore, *Cost-Benefit Analysis and Agency Independence*, 81 U. Chi. L. Rev. 609, 619 (2014) (alluding to "[f]ears that agencies will manipulate cost-benefit analysis to promote their agendas.").

[182] For a formal definition, *see* MARTIN J. OSBORNE & ARIEL RUBINSTEIN, A COURSE IN GAME THEORY 54–56 (1994).

[183] *See*, *e.g.*, *id*. at 15–16 (calling the game "Bach or Stravinsky").

Now, it is easily observed that both of them being at the boxing match or at the opera are the superior outcomes. Certainly, one person has his or her preference satisfied to a greater degree than the other in either outcome. But no person can do better by unilaterally leaving for the competing spectacle once the two are together. An encounter at the boxing match or at the opera is therefore the Nash equilibria of the game. As the two are unable to communicate, however, it could happen that they do not actually meet. The woman, for instance, might make her way to the opera while the man waits at the boxing match. This state of affairs is not stable, but it is rationalizable. The woman goes to the theatre because she believes the man to be at the opera, while the man is at the ring because he believes the woman to be headed to the boxing match. So even though the woman being at the opera and the man being at the boxing match results in an outcome nobody wanted, there are beliefs that make their respective choices rational.

Ponder, on the other hand, the prisoner's dilemma. Two suspects are held incommunicado in separate cells and asked to confess to a crime they perpetrated together. The police do not have sufficient evidence to prosecute them if no one confesses. The suspects are, however, promised leniency if they confess. Moreover, the suspect who confesses will be granted immunity if her accomplice denies. Their predicament may be represented by the following matrix:

	Don't Confess	Confess
Don't Confess	3, 3	0, 4
Confess	4, 0	1, 1

The scenario where both confess is strictly worse for the prisoners than the scenario where both deny. But a prisoner does not improve her own situation by denying if the other prisoner confesses. In fact, she does better by confessing if the other prisoner denies. Hence the only Nash equilibrium has both suspects confessing.[187] Importantly, a prisoner's refusal to confess is not rationalizable. No matter what her partner in crime chooses to do, she herself is better off confessing. There is no belief that explains not confessing.

These game-theoretic examples illuminate the logic of rationalizability. A course of action that ultimately turns out to be sub-optimal may nevertheless be best given the decisionmaker's reasonably held beliefs. A decision that is rationalizable is, at least, not clearly irrational.[189] In similar vein, CBA may be prepared not to identify the welfare-maximizing project or to enforce a deliberated compromise but to show that a particular rule is not utterly indefensible.

Still, rationalization, in the regulatory context, demands more than just numbers that add up. Rationalizing CBA has to be complete. For CBA to establish that the adopted policy is, under one set of suppositions, superior to its rivals, it has to take all costs and benefits into account. An

[187] OSBORNE & RUBENSTEIN, *supra* note 182, at 16–17.
[189] In fact, the set of each player's rationalizable actions in a game can be derived through the iterated elimination of dominated strategies. OSBORNE & RUBENSTEIN, *supra* note 182, at 61.

exception to this requirement is if Congress has explicitly barred the administrative agency from considering certain kinds of costs or benefits.[190] A second condition is consistency. Consistency concerns the relation of the parameters to each other.[191] An example of consistency is symmetric treatment of costs and benefits.[192] If costs are discounted, benefits should be too. And if unintended costs are included, then, as a general matter, unintended benefits should be too.[193] Unless there is a reason for deviating from this general rule—and, again, a statutory instruction might constitute such a reason—a policy cannot be rationalized by a CBA that does not respect symmetric treatment of costs and benefits.

Finally, the CBA should be plausible. Plausibility has both procedural and substantive elements, in that it can apply to theory, method, or results. For example, it is not clear what principle could inform the monetization of as abstract a value as human dignity. But substantively, "it would seem extravagant to assign a value [of human dignity] in excess of the value of human life."[194] Plausibility is also a matter of degree. There are more and less convincing techniques for placing recreational value on a natural resource. One technique is the travel cost method: if a consumer is willing to incur *x* dollars to travel to a nature reserve, the analyst concludes that the recreational value of the natural reserve to her, as revealed through her choice, exceeds *x* dollars.[195] Another technique is the contingent valuation method discussed earlier—the analyst apprises survey respondents of various facets of the natural resource being valued before asking them for their WTP to enjoy the natural resource.[196] Both techniques are regularly used in environmental CBAs, but the latter is more controversial than the former because of doubts over the reliability of hypothetical data.[197]

Plausibility is admittedly an elastic test. First, there is no bright line separating plausible theories, methods, or results from implausible ones.[198] Second, it is unclear if in evaluating the plausibility of a CBA, one should assess theory, method, or results on their own merits or whether there is a sliding scale, such that a more plausible showing in one aspect compensates for a less plausible showing in another.[199] Despite these uncertainties, plausibility retains some bite. Sunstein suggests, for instance, that "[i]f . . . the value of a statistical life is $9 million, then injuries

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[190] *See* Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Life Ins. Co., 463 U.S. 29, 43 (1983) ("an agency rule would be arbitrary and capricious if the agency has relied on factors which Congress has not intended it to consider . . . .").
[191] *See* Bronsteen et. al., *supra* note 58, at 1603 (2013).
[192] *Id.*
[193] *Cf.* REVESZ & LIVERMORE, *supra* note 43, at 12; Christopher C. DeMuth & Douglas H. Ginsburg, *Rationalism in Regulation*, 108 MICH. L. REV. 877, 886 (2010) (book review).
[194] Cass R. Sunstein, *The Limits of Quantification*, 102 CALIF. L. REV. 1369, 1396 (2014).
[195] *See*, *e.g.*, George Parsons, *The Travel Cost Model*, *in* A PRIMER ON NONMARKET VALUATION 269 (Patricia A. Champ et al. eds., 2003).
[196] *See* DANCY, *supra* note 178.
[197] The exchange in *The Journal of Economic Perspectives* lays out the arguments on both sides. *See* Richard T. Carson, *Contingent Valuation: A Practical Alternative When Prices Aren't Available*, 26 J. ECON. PERSP. 27, 27–28 (2012); Peter A. Diamond & Jerry A. Hausman, *Contingent Valuation: Is Some Number Better Than No Number?*, 8 J. ECON. PERSP. 45, 45 (1994); W. Michael Hanemann, *Valuing the Environment Through Contingent Valuation*, 8 J. ECON. PERSP. 19, 19–20 (1994); Jerry Hausman, *Contingent Valuation: From Dubious to Hopeless*, 26 J. ECON. PERSP. 43, 43 (2012); Catherine L. Kling et al., *From Exxon to BP: Has Some Number Become Better than No Number?*, 26 J. ECON. PERSP. 3, 3–4 (2012).
[198] *See, e.g.,* Sunstein, *supra* note 194, at 1387–90.
[199] *Id.*

and illnesses that fall short of death cannot plausibly be valued in excess of $9 million, and a wide variety of other harms must be assigned a lower value as well."[200] If true,[201] a policy cannot be rationalized by CBA if, for all values of injuries and illness that do not surpass the value of a statistical life, the monetized benefits of the regulation falls short of its monetized costs.

What are we to make then of the allegation that allowing administrative agencies to conjure numbers for CBA amounts to a "misuse[]"[202] or "blatant abuse"[203] of CBA? These charges stick only if CBA is represented as something it is not. Rationalizing CBA does not prove that a policy is the best one; only that it could be. It therefore imposes on the administrative agency only a thin notion of rationality. Once rationalizing CBA is recognized for what it is, its formality is no more false than the informality of qualitative cost-benefit reasoning.[205]

3. Implications

3.1 Reflective Equilibrium in Administrative CBA

CBA seems poised to become an enduring fixture in American administrative law, so much so that one scholar has urged those resisting its spell to "stop wasting their energy tilting at windmills and put their extraordinary talents to use in more promising endeavors."[206] Yet, although Presidents since Ronald Reagan have steadfastly embraced OIRA review of regulations, CBA practice has continued to evolve and be shaped by actors like the administrative agencies themselves.[207] As headlined at the outset, the aim of this Article is not to prescribe or promote one interpretation of CBA over the others, but to clarify what it means for administrative agencies to do CBA. According to Jonathan Masur and Eric Posner:

> Cost-benefit analysis is a decision procedure that requires the decision-maker to estimate both the benefits and the costs of a regulation in monetary terms. If a regulator chooses not to monetize all the benefits or all the costs, it is not doing cost-benefit analysis. If it is not doing cost-benefit analysis, what is it doing?[208]

If we decline to settle the debate over CBA by definitional fiat, the question, though asked rhetorically, admits of a serious response. If CBA sets out to capture a policy's impact on overall well-being, then all gains and losses of prudential value must be registered. This means, however, that the costs and benefits entering into the analysis have to be those that make the

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[200] *Id.* at 1404.
[201] I doubt this unqualified claim because the value of a statistical life estimates the value of a small reduction in the risk of death and not the value of life itself.
[202] Sinden, *supra* note 44, at 172.
[203] Cole, *supra* note 181, at 82.
[205] *Cf.* Sinden, *supra* note 44. *See also* Coates, *supra* note 17, at 902 ("One form of camouflage that seems likely to recur is the presentation of guesstimated CBA as quantified CBA—which potentially misleads the public by omitting significant information about the uncertainty, judgment, and sensitivity of particular numerical results in a CBA.").
[206] Richard J. Pierce, Jr., *The Regulatory Budget Debate*, 19 N.Y.U. J. LEGIS. & PUB. POL'Y 249, 250 (2016)
[207] Livermore, *supra* note 181, at 620.
[208] Masur & Posner, *supra* note 53, at 89.

individual's life worse or better *for her*. Thus, one should ignore an individual's disinterested desires,[209] although these desires may still be relevant on a hedonic account of well-being if knowledge of their satisfaction induces in her a "warm glow." So, one answer to Masur and Posner is that the regulator could be maximizing aggregate welfare on a theory that does not treat every cost and benefit as necessarily affecting the goodness of lives for the people living them. The regulator could also be trying to replicate the result of a process or procedure. Replicative CBA can ignore certain costs and benefits so long as doing it makes it more accurate or faithful to the thing it is emulating. Values that do not find expression in consumer behavior, for example, may be safely excluded from CBA that seeks to recreate free market outcomes.

What the regulator is most likely *not* doing is rationalization because rationalization demands an all-things-considered conclusion. Rationalizing CBA has to address all relevant considerations, including those not usually thought to be reducible to numbers. But even then, as noted before, the regulator can and probably should disregard particular costs and benefits if Congress has so instructed. Such a CBA rationalizes insofar as the regulator's decision makes sense in light of the constraints that she operates under.

Insistence on the monetization of every conceivable cost and benefit approaches a rationalizing interpretation of CBA.[210] Conversely, a welfarist or replicative interpretation of CBA militates against the idea that all things can and should be counted. By reasoning in such a fashion for this and other features of CBA, we may attain a state of reflective equilibrium that clarifies the role of CBA in a regulatory democracy.[211]

While one of my concerns in this Article is to bring the interpretation and the methodology of CBA into harmony, the reader may be interested in the interpretation of CBA that ought to govern in the administrative state. I am, unfortunately, unable to provide a comprehensive answer here. I proffer, however, some general remarks that might bear on a response. First, there is a distinction between the interpretation of CBA that administrative agencies are asked to conduct and the review of CBA by courts. The former might conduct, say, welfarist CBAs that are then incorporated into the administrative record and examined by the latter only for consistency. This arrangement could be desirable for reasons of institutional capacity, including the greater expertise that administrative agencies have vis-à-vis the courts. Second, there does not have to be a single interpretation of CBA that all administrative agencies have to imbibe and implement. This heterogeneity in CBA could arise between agencies because of the nature of the task assigned to them. For example, CBA that replicates free market outcomes may only be useful for regulation that seeks to remedy market failure.[212] It may not be as appropriate for the question of whether a religious group should be able to deny education to

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[209] *See* ADLER & POSNER, *supra* note 60, at 127.

[210] This implication is not, however, a necessary one. It is possible to believe in a pure, unqualified, preference-satisfaction theory of well-being and hence hold, under a welfarist interpretation of CBA, that all costs and benefits should be monetized on the basis of WTP.

[211] *See generally* JOHN RAWLS, A THEORY OF JUSTICE (Höffe ed., 2013).

[212] *See*, *e.g.*, Int'l Union, UAW v. OSHA, 938 F.2d 1310, 1319 (D.C. Cir. 1991) (holding that Section 3(8) of the Occupational and Health Safety Act permitted cost-benefit analysis because "while the legislative history is almost blank on the subject, it suggests concern with market failures . . . and properly conducted cost-benefit analysis should yield a solution approximating that of a market undistorted by market failures.").

its children.[213] Finally, CBA can be layered, such that one component is built on top of another. An administrative agency could perform welfarist CBA before monetizing and adding non-welfarist costs and benefits to arrive at a rationalizing CBA. The interpretation and justification for each of these steps are related but distinct.

3.2 CBA and Judicial Review

While academics vex themselves over the theoretical subtleties hidden in CBA, judges have to discharge their obligation to decide whether regulations are properly promulgated, and therefore legally enforceable. As they do this, those serving on the federal district courts and on the federal court of appeals have to take reference from the law, as illuminated by precedent, even as they are colored by their own understanding of the values served by judicial review of administrative decisions.[215] Supposing it were true, say, that administrative law is animated by the need to rein in the prerogative of unaccountable bureaucrats who may be acting from political conviction rather than scientific expertise, a lower court judge is nevertheless not free to depart from the strictures of *Vermont Yankee* and demand of administrative agencies procedures that go above and beyond those prescribed by Congress. As recently re-emphasized, "[the Administrative Procedure Act (APA)] sets forth the full extent of judicial authority to review executive agency action for procedural correctness," and a court may not compel administrative agencies to undertake additional steps deemed to be conducive to "some vague, undefined public good."[216] *Vermont Yankee* has buried "the notion that the courts have a continuing 'common-law' authority to impose procedures not required by the Constitution in the areas covered by the APA."[217] Insofar as cost-benefit analysis is a decision procedure,[218] it cannot be grafted into administrative agencies by judicial decree.[219]

Anticipating this hurdle, Sunstein has discerned in the APA a textual hook for CBA.[220] As he has it, a regulation is *prima facie* "arbitrary and capricious," and therefore liable to be set aside under Section 706 of the APA,[221] if the administrative agency neither demonstrates, through a quantified cost-benefit analysis, that its benefits exceeds its costs, nor excuses the absence of such a demonstration. Yet, there seems to be, under the APA, "no general obligation on [administrative] agencies to produce empirical evidence."[222] All that is necessary is for an

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[213] *See* Martha C. Nussbaum, *The Costs of Tragedy: Some Moral Limits of Cost Benefit Analysis*, 29 J. LEGAL STUD. 1005, 1025–26 (2000); Weisbach, *supra* note 161, at 151 (describing how agencies use CBA to perform specialized tasks, not necessarily maximize welfare).
[215] *See generally* RONALD DWORKIN, LAW'S EMPIRE (1986).
[216] Perez v. Mortg. Bankers Ass'n, 135 S. Ct. 1199, 1207 (2015).
[217] Antonin Scalia, *Vermont Yankee: The APA, the D.C. Circuit, and the Supreme Court*, 1978 SUP. CT. REV. 345, 395 (1978).
[218] *See* ADLER & POSNER, *supra* note 60, at 62.
[219] *See* Vermeule, *supra* note 27; *but see* Jonathan S. Masur & Eric A. Posner, *Cost-Benefit Analysis and The Judicial Role* 37–40 (Coase-Sandor Institute for Law and Economics Working Paper No. 794, 2017), https://papers.ssrn.com/sol3/Papers.cfm?abstract_id=2752068 (suggesting that the APA should be interpreted "as a general authorization to courts to develop a common law of the administrative state").
[220] Sunstein, *supra* note 28, at 16.
[221] 5 U.S.C. § 706 (2012).
[222] Stilwell v. Office of Thrift Supervision, 569 F.3d 514, 519 (D.C. Cir. 2009).

administrative agency "to justify its rule with a reasoned explanation."[223] Sunstein's approach is therefore viable only if the CBA that is offered in support of the regulation is treated as a form of rationalization. As glossed by the Supreme Court, a decision is "arbitrary and capricious" if not "based on a consideration of the relevant factors" or if "there has been a clear error of judgment."[224] The standard of review is "a narrow one" and "[t]he court is not empowered to substitute its judgment for that of the agency."[225] Judicial interpretation of this language after *Vermont Yankee* has imposed on administrative agencies the obligation to, among other things, make the scientific data underpinning their policy conclusions available for public comment so as to ensure that "all relevant factors" have been surfaced and therefore taken into account.[226] Asking agencies to generate a rationalizing CBA (and place it on the administrative record)[227] is therefore not necessarily foreclosed by current jurisprudence if it sounds in the APA. Indeed, such an accounting may facilitate and, perhaps, even be imperative to, an assessment of whether there is a "rational connection between facts and judgment" that is sufficient to survive arbitrary and capricious review.[228]

Someone whose preferences over outcomes are accurately represented by the payoff matrix in the prisoner's dilemma acts irrationally if she confesses. There is no belief attributable to her that renders her choice comprehensible. Likewise, an administrative agency acts arbitrarily and capriciously if it cannot furnish a set of numbers satisfying the rather minimal conditions adumbrated above that sustains its regulation.[229] By asking for rationalization, courts do not thereby convert bureaucrats into the instruments of judicial sensibilities. This is not to say that the judicial role in these circumstances is entirely mechanical, akin to that of an automaton whose task is to confirm that the sums do tally. If this were all that the courts demanded, then regulations can pass muster merely on the *ipse dixit* of administrative agencies.[230] To fulfill its statutory duty under the APA, a court has to assume the posture of an auditor, checking the statement of costs and benefits for completeness, consistency, and plausibility. Some of these conditions, like plausibility, are more plastic than others, and the threshold that separates

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[223] *Id.*
[224] Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402, 416 (1971).
[225] *Id.*
[226] *See* U.S. v. Nova Scotia Food Prods. Corp., 568 F.2d 240, 251 (2d Cir. 1977*)*. Some have maintained that *Nova Scotia*, and its progenitor, Portland Cement Ass'n v. Ruckelshaus, 486 F.2d 375 (D.C.Cir.1973), sit uneasily with the lesson of *Vermont Yankee*. *See*, *e.g.*, Jack M. Beermann & Gary Lawson, *Reprocessing Vermont Yankee*, 75 GEO. WASH. L. REV. 856, 857 (2007). Be that as it may, *Nova Scotia*'s continuing vitality has been recognized in, for instance, Am. Radio Relay League, Inc. v. FCC, 524 F.3d 227, 238 (D.C. Cir. 2008). *See also* Gillian E. Metzger, *Embracing Administrative Common Law*, 80 GEO. WASH. L. REV. 1293, 1305 (2012) ("The [Supreme] Court appears to have sanctioned these developments, or, at minimum, has made no effort to rebuff them.").
[227] *See* SEC v. Chenery Corp., 318 U.S. 80, 95 (1943) (holding "that an administrative order cannot be upheld unless the grounds upon which the agency acted in exercising its powers were those upon which its action can be sustained").
[228] *See* Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 56 (1983).
[229] *See generally* Sunstein, *supra* note 28.
[230] *See* Masur & Posner, *supra* note 53, at 136 ("Agencies regularly promulgate regulations for which they do not fully quantify costs and benefits . . . . In many cases, these regulations involved significant, measurable costs in excess of $100 million and no quantified benefits. Nonetheless, the agencies proceeded with the regulations based upon little more than conclusory statements that, in the agencies' judgments, the benefits justified the cost. This is not sound practice.").

adequate rationalizing CBAs from deficient ones must, ineluctably, be the subject of elaboration and contestation.

Judges are, to some extent, already engaged in this enterprise for CBAs that are adduced in the administrative record.[231] Administrative agencies have to explain the methodology employed in any CBA tendered in defense of their regulations, and these explanations are probed for rationality and not, ostensibly, wisdom.[232] Thus, the D.C. Circuit rebuffed a Federal Motor Carrier Safety Administration CBA for revisions to the hours of service regulations covering truck drivers because it found "dubious[]" the assumption that "that time spent driving is equally fatiguing as time spent resting—that is, that a driver who drives for ten hours has the same risk of crashing as a driver who has been resting for ten hours, then begins to drive."[233] More notoriously, the Fifth Circuit, in *Corrosion Proof Fittings v. EPA*, vacated an asbestos ban, faulting the EPA's analysis for, *inter alia*, failing to consider policy alternatives less drastic than a blanket prohibition and overlooking the health risks posed by the substitutes products, lapses that speak to completeness. [234] While one might debate about whether the scrutiny that the regulation received was overly stringent,[235] a plausibility argument is evident in the court's reasoning that

> [e]ven taking all of the EPA's figures as true, and evaluating them in the light most favorable to the agency's decision (non-discounted benefits, discounted costs, analogous exposure estimates included), the agency's analysis results in figures as high as $74 million per life saved.
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> The EPA would have this court believe that Congress, when it enacted its requirement that the EPA consider the economic impacts of its regulations, thought that spending $200-300 million to save approximately seven lives (approximately $30-40 million per life) over thirteen years is reasonable.
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[231] *See* Caroline Cecot & W. Kip Viscusi, *Judicial Review of Agency Benefit-Cost Analysis*, 22 GEO. MASON L. REV. 575, 575–77 (2015).
[232] *See* Owner-Operator Indep. Drivers Ass'n, Inc.v. Fed. Motor Carrier Safety Admin., 494 F.3d 188, 203 (D.C. Cir. 2007*)*; Pub. Citizen v. Fed. Motor Carrier Safety Admin., 374 F.3d 1209*,* 1216 (D.C. Cir. 2004).
[233] *Pub. Citizen,* 374 F.3d at 1218.
[234] 947 F.2d 1201, 1217 (5th Cir. 1991). *See also* Daniel A. Farber, *Rethinking the Role of Cost-benefit Analysis*, 76 U. CHI. L. REV. 1355, 1380 (reviewing RICHARD L REVESZ & MICHAEL A. LIVERMORE, RETAKING RATIONALITY: HOW COST-BENEFIT ANALYSIS CAN BETTER PROTECT THE ENVIRONMENT AND OUR HEALTH (2008)) ("CBA has clearly contributed to the dysfunctionality of US toxics regulation. *Corrosion Proof Fittings v. EPA* is a *bête noire* among environmentalists for this reason.").
[235] The court adopted the substantial evidence standard of the Toxic Substances Control Act, "generally considered to be more rigorous than the arbitrary and capricious standard normally applied to informal rulemaking." *Corrosion Proof Fittings*, 974 F.2d at 1214.

> The EPA's willingness to argue that spending $23.7 million to save less than one-third of a life reveals that its economic review of its regulations, as required by TSCA, was meaningless.[236]

But there is still some distance between these attitudes and that taken in *Business Roundtable*. Recall that there, the court controversially dismissed two studies relied upon by the SEC in its rulemaking, one of them published in a reputable peer-reviewed journal,[237] as "relatively unpersuasive" before proceeding to conclude that the SEC had not produced anything more than "admittedly (and at best) 'mixed' empirical evidence" for the proposition that proxy access for certain qualified shareholders to nominate candidates to the board is likely to increase shareholder value.[238] This holding seems to evince a standard that transcends that of plausibility and risks offending the principle that agencies have broad discretion in exercising their professional and expert knowledge to navigate uncertainty.[239] Be that as it may, the cases suggest that judicial review of rationalizing CBA can be calibrated to promote good governance while at the same time respecting the fundamental doctrines of American administrative law.

4. Conclusion

Recent treatments of the legal and normative status of cost-benefit analysis in the American administrative state have been dominated by a contrast between "quantified" and "non-quantified" approaches. But a debate conducted on such terms risks eliding the divisions between five phases of CBA, *viz.* identification, quantification, monetization, aggregation, and comparison, and occluding inquiry into the free-standing justification for each of them. Unless sufficient analytic caution is exercised, an argument in favor of quantification, for example, may be inadvertently accepted as an argument for "quantified" cost-benefit analysis. Moreover, monetization and aggregation, not quantification, are the defining stages of CBA. Interpretations of CBA should therefore be interpretations of these two steps. This Article offered three such interpretations of CBA: welfarist, replicative, and rationalizing. Distinguishing between these interpretations of CBA should bring clarity to what it is that is being recommended or resisted under the label of cost-benefit analysis, whether it is in the realm of executive review or in the domain of judicial review.

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[236] *Id.* at 1222–23.
[237] J. Harold Mulherin & Annette B. Poulsen, *Proxy Contests & Corporate Change: Implications for Shareholder Wealth*, 47 J. FIN. ECON. 279 (1998).
[238] Business Roundtable v. SEC, 647 F.3d 1144, 1150–51 (D.C. Cir. 2011).
[239] *See*, *e.g.*, Nat'l Wildlife Fed'n v. EPA, 286 F.3d 554, 563 (D.C. Cir. 2002) ("[W]e do not review EPA's cost figuring *de novo,* but accord EPA discretion to arrive at a cost figure within a broad zone of reasonable estimate.").