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## Stakeholder Collaboration as an Alternative to Cost-Benefit Analysis

Karen Bradshaw

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## Stakeholder Collaboration as an Alternative to Cost-Benefit Analysis

Karen Bradshaw\*

*This Article compares and contrasts cost-benefit analysis with “collaborative analysis” in agency decision-making. While mathematical models drive cost-benefit analysis, ongoing stakeholder negotiations drive collaborative analysis. Cost-benefit analysis relies on economists inputting numerical values into a model, whereas collaborative analysis relies on the diverse perspectives of groups and individuals affected by an agency’s decision. Administrative law scholars have exhaustively researched cost-benefit analysis while overlooking widespread agency reliance on collaborative analysis. This Article advances the novel observation that legislatures and courts sometimes treat collaborative analysis and cost-benefit analysis as interchangeable.*

*Administrative law scholars might find it unorthodox, even irresponsible, to equate the deliberative process of average citizens with numerical calculations performed by economists. Yet, collaborative analysis works well in several contexts when numerical analysis does not: where data are scarce, burdens are unevenly distributed, normative values are at stake, and conditions are changing. Under such circumstances, agency officials report that collaborative analysis creates better outcomes, secures ex ante social approval of policies, provides adaptive decision-making, and reduces conflict and litigation risk relative to alternative tools. Despite the benefits of collaborative analysis and its surprisingly*

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*widespread use, its potential remains largely untapped. In identifying and defining collaborative analysis for the first time, this Article provides agencies, stakeholders, and courts the tools necessary to understand collaborative analysis and tap into its benefits.*

## CONTENTS

INTRODUCTION .....	657
I. REVEALING THE TOOL OF COLLABORATIVE ANALYSIS .....	661
A. Case Study: The Western Arctic Caribou Herd Working Group .....	661
1. The historical development of herd management .....	662
2. “Scientific” management at odds with social realities .....	664
3. The emergence of a stakeholder collaboration .....	665
4. Current conditions .....	669
B. Agencies’ Use of Collaborative Analysis .....	671
II. COMPARING COLLABORATIVE ANALYSIS WITH COST-BENEFIT ANALYSIS .....	676
A. The Benefits of Collaborative Analysis .....	677
1. Incorporating moral inputs .....	677
2. Facilitating Pareto superior outcomes .....	679
3. Inclusiveness of diverse perspectives and talents .....	680
4. Generating better data .....	683
5. Increasing social acceptance .....	685
6. Overcoming group polarization .....	686
7. Enabling resource pooling .....	689
8. Creating responsive policies .....	690
B. Considering Counterarguments .....	691
1. Irrational cognitive distortions .....	691
2. Capture .....	694
3. Inclusiveness .....	700
4. Decision quality .....	703
C. Cost-Benefit Analysis Fails and Collaborative Analysis Works .....	705
D. When Collaborative Analysis Works Well and When It Does Not ...	710
E. Considering the Relative Roles of Cost-Benefit Analysis and Collaborative Analysis in the Climate Context .....	713
III. DOCTRINAL CONSIDERATIONS .....	716
CONCLUSION .....	721

## INTRODUCTION

Humans have managed risk since time immemorial. Our ancestors weighed the benefits of gathering food against being attacked by wildlife. Early humans did not make such choices by plugging numbers into a formula; they talked in groups about what could happen, drew on the wisdom of elders, and tried small experiments to advance knowledge collectively.<sup>1</sup>

Humans still face risks, ranging from climate change to nuclear disaster. We imagine that our mechanisms for managing risks have evolved to become more sophisticated. In the modern administrative state, agencies play a key role in regulating activities to constrain risks to an acceptable level.<sup>2</sup> Agencies make thousands of decisions on acceptable risk levels every year, ranging from vaccine recommendations to airplane cargo loads. Some agencies use scientific and economic techniques unimaginable to our ancestors, such as cost-benefit analysis.<sup>3</sup> In countless cases, agencies reliably make good decisions using a top-down framework informed by quantitative tools.<sup>4</sup>

Yet, administrative law scholars tend to overestimate the importance of numerical approaches to agency decision-making.<sup>5</sup>

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1. These examples highlight the distinction between intuitive and analytical reactions to risk. See CASS R. SUNSTEIN, *WORST-CASE SCENARIOS* 5–6 (2007).

2. To provide one example, consider the role of risk assessment and management in the environmental context. The Environmental Protection Agency defines risk assessment as “a process in which information is analyzed to determine if an environmental hazard might cause harm to exposed person and ecosystems.” OFFICE OF THE SCI. ADVISOR, U.S. ENVTL. PROT. AGENCY, *AN EXAMINATION OF EPA RISK ASSESSMENT PRINCIPLES AND PRACTICES* 2 (2004). “Environmental risk management seeks to determine what environmental risks exist and then determine how to manage those risk [sic] in a way best suited to protect human health and the environment.” U.S. ENVTL. PROTECTION AGENCY, *Risk Management*, EPA.gov, <https://www.epa.gov/risk/risk-management> (last updated May 1, 2017).

3. Indeed, reliance on data-driven risk assessment has become the default practice of the legal establishment. See generally SUNSTEIN, *supra* note 1; Elena Kagan, *Presidential Administration*, 114 HARV. L. REV. 2245, 2353 (2001).

4. SUNSTEIN, *supra* note 1.

5. CASS R. SUNSTEIN, *THE COST-BENEFIT STATE: THE FUTURE OF REGULATORY PROTECTION* IX (2002); Kagan, *supra* note 3 (noting the “ever-widening appreciation of the role of cost-benefit analysis and comparative risk assessment in the formulation of administrative policy”); Alan H. Sanstad, *Abating Carbon Dioxide Emissions from Electric Power Generation: Model Uncertainty and Regulatory Epistemology*, 44 J. L. STUD., S423, S423 (2015) (“Computational modeling has become a primary regulatory methodology in the decades since the modern American environmental policy regime was established . . .”). As a field, administrative law tends to focus on a set of agencies whose policy choices lend themselves

In truth, agencies do not use cost-benefit analysis to inform the vast majority of regulatory decisions. Fewer than two percent of regulations promulgated in the past ten years, or 609 of 36,255 final rules, resulted from cost-benefit analysis.<sup>6</sup> How do agencies formulate policy for the other ninety-eight percent of regulations?<sup>7</sup>

In 2017, the Administrative Conference of the United States commissioned an Office of the Chairman Report to study how agencies make policy choices and manage risk without using cost-benefit analysis.<sup>8</sup> The Report showed that thirteen federal land and resource management agencies rarely, if ever, used numerical decision-making tools to guide policy. Instead, agencies relied heavily on “stakeholder collaborations” as a substitute for formula-based, numerical decision-making. In a recent article, I provided a descriptive, longitudinal overview of stakeholder collaborations. This Article builds upon that foundational work to advance a bold claim: In practice, agencies, legislatures, and courts have privileged collaborative analysis as equivalent to cost-benefit analysis. Administrative law scholarship should add collaborative analysis to the cannon of agency decision-making tools.

“Collaborative analysis” describes agencies’ use of groups of diverse non-agency stakeholders to develop policy recommendations. It derives from familiar participatory governance tools, such as responsive regulation, collaborative adaptive management, and stakeholder collaborations.<sup>9</sup> This Article advances a novel claim, however: The relational process of

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to cost-benefit analysis, such as the Environmental Protection Agency. Administrative law scholarship tends to overlook the federal land and resource management agencies that employ the tool of collaborative analysis discussed in this article, which includes agencies like the U.S. Forest Service, Bureau of Land Management, and National Park Service.

6. OFFICE OF INFO. AND REGULATORY AFFAIRS, OFFICE OF MGMT. AND BUDGET, 2017 DRAFT REPORT TO CONGRESS ON THE BENEFITS AND COSTS OF FEDERAL REGULATIONS AND AGENCY COMPLIANCE WITH THE UNFUNDED MANDATES REFORM ACT (2017). Some scholars suggest that the two percent of decisions guided by cost-benefit analysis are the most important decisions because they surpass a certain dollar threshold.

7. See, e.g., Gregory C. Keating, *Is Cost-Benefit Analysis the Only Game in Town?*, 91 S. CAL. L. REV. 195, 197-200 (2018); Jonathan S. Masur & Eric A. Posner, *Norming in Administrative Law*, 68 DUKE L.J. 1383, 1384-85 (2019) (describing agencies “norming” by choosing standard industry practices to set a regulatory level).

8. KAREN BRADSHAW, ADMIN. CONFERENCE OF THE U.S., STAKEHOLDER COLLABORATIONS FOR MANAGING LAND AND NATURAL RESOURCES (2017).

9. AYRES & BRAITHWAITE, *infra* note 109, at 87; Christine Parker, *Twenty Years of Responsive Regulation: An Appreciation and Appraisal*, 7 REG. & GOVERNANCE. 2, 7 (2013).

weighing choices in groups—“collaborative analysis”—is analogous to cost-benefit analysis. Moreover, I argue that courts should—and do—consider these tools as interchangeable, both being evidence of reasoned decision-making and appropriate for different circumstances. Collaborative analysis can serve as a complement to, or even substitute for, cost-benefit analysis.

Human analytical potential extends beyond science and numbers. Discounting decision-making tools outside of cost-benefit analysis leaves much on the table.<sup>10</sup> When risk is great and unknowable, we should rely on the tools that our ancestors used to survive attacks by wild animals: human relationships, pooled information, and an openness to constant learning in response to the natural environment.<sup>11</sup> Agencies do precisely this by using collaborative analysis to incorporate diverse sources of information and analysis.

This Article compares and contrasts collaborative analysis with cost-benefit analysis. I grapple with Richard Thaler and Cass Sunstein’s behavioral economics arguments against public participation. Collaborative analysis can lead to more accurate valuation assessments, Pareto superior outcomes, inclusiveness, increased social acceptance, reduce polarization, resource pooling, and responsive policy.<sup>12</sup> The tool is, however, subject to serious concerns, including democratic considerations, capture, a lack of inclusiveness, and problematic decision quality.<sup>13</sup>

Doctrinally, this Article makes a surprising argument: Existing law allows agencies to defend decisions in litigation using collaborative analysis, just as they use cost-benefit analysis or even an Environmental Impact Statement to support a decision.<sup>14</sup> This Article traces the basis for this claim in statutory language and caselaw. Vitally, it also sets forth a framework to address the interwoven questions of (1) the conditions under which

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10. See *infra* Sections II.B.3 (discussing the diverse information offered by traditional ecological knowledge, relational feminism, ecofeminism, resource-users, and employees within an industry—none of which are captured through quantitative data approaches).

11. See Edward H. Hagen & Peter Hammerstein, *Game Theory and Human Evolution: A Critique of Some Recent Interpretations of Experimental Games*, 69 THEORETICAL POPULATION BIOLOGY 339, 340–41 (2006).

12. See *infra* Section II.A.

13. See *infra* Section II.B.

14. See *infra* Section III.

collaborative analysis are appropriate, and (2) when collaborative analysis is sufficiently inclusive.<sup>15</sup>

Courts should read statutes about agency decision-making in concert with laws requiring stakeholder input. Courts should also afford deference to agencies' decisions based on information gathered through democratic participation.<sup>16</sup> This shifts judicial inquiry away from second-guessing empirical risk assessments and toward evaluating the agencies' procedural fairness.<sup>17</sup> Ostensibly neutral qualitative tools are largely incomprehensible to non-experts;<sup>18</sup> they can serve as a smokescreen for highly politicized agency decisions and judicial analysis.<sup>19</sup> In contrast, courts are expert in evaluating procedure and democratic inclusion. Thus, democratic legitimacy may require broadened, formalized acceptance of citizen input as a valid part of policy analysis.<sup>20</sup>

Part I provides a case study of an agency changing from data-driven analysis to collaborative analysis. It expands upon the case

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15. *Id.*

16. *See id.*

17. *See id.*; see also Clayton P. Gillette & James E. Krier, *Risk, Courts, and Agencies*, 138 U. PA. L. REV. 1027, 1035 (1990) (“[C]ourts simply should not play a significant role in public risk assessment and management, partly because they share the uninformed popular mindset and partly because they are inept assessors and managers in any event.”); Peter Huber, *Safety and the Second Best: The Hazards of Public Risk Management in the Courts*, 85 COLUM. L. REV. 277, 278 (1985) (“[T]he judicial system is . . . incapable of engaging in the aggregative calculus of risk created and risk averted that progressive public-risk management requires.”).

18. Cass R. Sunstein, *Cost-Benefit Analysis and the Environment*, 115 ETHICS 351, 380 (2005); Laurence H. Tribe, *Trial by Mathematics: Precision and Ritual in the Legal Process*, 84 HARV. L. REV. 1329, 1332 (1971) (describing the use of mathematics in criminal trials as “casting a spell” over courts and juries, even when the methodology and outcomes are deeply flawed).

19. John C. Coates IV, *Cost-Benefit Analysis of Financial Regulation: Case Studies and Implications*, 124 YALE L.J. 882, 899, 902 (2015) (“[Cost-benefit analysis can] provide camouflage, reducing the transparency of a rulemaking process . . . [and can] (1) obscure the issues at play, (2) raise the risks for lawmakers to question regulators, (3) shift power from Congress to regulators, (4) hide risk seeking, and (5) favor factions in distributional struggles among lawmakers.”); Thomas J. Miles & Cass R. Sunstein, *The Real World of Arbitrariness Review*, 75 U. CHI. L. REV. 761, 781 (2008); Sidney A. Shapiro, *OMB and the Politicization of Risk Assessment*, 37 ENVTL. L. 1083, 1097-98 (2007); cf. Jody Freeman & Adrian Vermeule, *Massachusetts v. EPA: From Politics to Expertise*, 2007 S. CT. REV. 51, 96 (acknowledging politicization but arguing that the Supreme Court pushed back against it through “expertise-forcing”).

20. Practically, agency collaboration with stakeholders improves substantive decisions, lessens litigation risk, builds trusts, and increases social acceptance of policies. *See infra* Section II.A.

study to define collaborative analysis as the practice of obtaining ongoing input from diverse stakeholders.

Part II compares and contrasts cost-benefit analysis with collaborative analysis. It highlights the benefits of collaborative analysis relative to cost-benefit analysis, such as producing more inclusive decision-making and better valuations. It acknowledges, however, concerns with the tool, emphasizing best practices to include marginalized populations and avoid agency capture. Defining the situations in which collaborative analysis is (and is not) appropriate provides crucial insight into the benefits and limitations of this approach.

Part III presents a novel doctrinal analysis of how courts can assess the legality of agencies relying on collaborative analysis. Indeed, I argue that courts are better positioned to analyze the procedural fairness of collaborative analysis than the empirical questions imbedded in cost-benefit analysis. Despite its widespread use, collaborative analysis's potential is not yet fully realized. I conclude by providing suggestions for how it can be expanded to guide policymaking in other areas.

#### I. REVEALING THE TOOL OF COLLABORATIVE ANALYSIS

This Part presents a specific, real-world case study of an agency transitioning from data-driven management to collaborative analysis (Section I.A). It then expands upon this particular example to provide a generalized overview of agencies' use of stakeholder collaborations and the resulting collaborative analysis (Section I.B).

##### *A. Case Study: The Western Arctic Caribou Herd Working Group*

In Alaska, the caribou, or North American reindeer, are neither domesticated nor herded. Yet many stakeholders have strong interests in caribou herd management, including commercial hunting guides, recreational hunters, wildlife conservationists, and Alaskan Native Communities. Caribou migrate through a large landscape owned by a mix of federal, state, native, corporate, and private landholders.<sup>21</sup> Landowners have differing, sometimes

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21. W. ARCTIC CARIBOU HERD WORKING GRP., COOPERATIVE MANAGEMENT PLAN 6 (2011). Wildlife habitat for large mammals frequently spans many diverse landowners, a

conflicting, approaches to wildlife management.<sup>22</sup> State and federal agencies divide management responsibilities according to a complicated system.

This case study focuses on agency decision-making regarding caribou management. It begins by situating the past and current importance of the caribou in indigenous Alaskan culture. Then, it describes a series of disastrous top-down, numerically driven agency decisions that decimated entire herds of caribou. Finally, agency officials with local ties to Alaskan Native Communities developed an alternative decision-making tool—collaborative analysis—that complemented numerical modeling to lead to better agency management.

### *1. The historical development of herd management*

Alaskan Native communities have hunted caribou in Alaska since time immemorial. After the United States purchased the Alaskan territory from Russia, the U.S. government gradually began regulating wildlife, including the caribou. These efforts largely displaced traditional hunting practices and incorporated non-native hunting uses.

Alaskan Native hunting practices differed sharply from those endorsed by state fish and game agencies within the continental United States.<sup>23</sup> For example, Alaskan Native communities historically took many animals during a brief period, consistent with the migratory patterns.<sup>24</sup> Traditionally, hunters would station themselves by a river and harvest the caribou as they swam to maximize the take.<sup>25</sup> Such hunting practices reflect traditional ecological knowledge, an oral history governing the

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phenomenon discussed in Challie Facemire & Karen Bradshaw, *Biodiversity Loss Viewed through the Lens of Mismatched Property Rights*, available at [https://www.adfg.alaska.gov/static/research/plans/pdfs/wah\\_management\\_plan\\_final\\_2011.pdf](https://www.adfg.alaska.gov/static/research/plans/pdfs/wah_management_plan_final_2011.pdf).

22. W. ARCTIC CARIBOU HERD WORKING GRP., *supra* note 21.

23. There were, of course, traditional Native American practices within the continental United States, which Western settlers violated, supplanted, and eventually overwrote.

24. Interview 16 (on file with the author); see also Ray Barnhardt & Angayuqaq Oscar Kawagley, *Indigenous Knowledge Systems and Alaska Native Ways of Knowing*, 36 ANTHROPOLOGY & EDUC. Q. 8, 8-9 (2005).

25. *Id.*

human relationship with the natural world.<sup>26</sup> But, these methods contrasted sharply with Western notions of ethical hunting practices.

In the 1900s, Alaskan game wardens used fines, arrests, and gun confiscation to punish traditional hunting practices. Such enforcement mechanisms bred distrust between Alaskan Native communities and Department officials. Against the backdrop of sharply different perspectives and a century of distrust, state and federal agencies in Alaska continue to manage wildlife upon which the lives of some rural Alaskan Native communities depend.<sup>27</sup>

In the 1970s, The Alaska Department of Game and Fish (“ADFG”) dramatically overestimated the size of the herd and issued many hunting permits over the objections of the Alaskan Native communities, which resulted in the largest failure in the history of state wildlife management. Two caribou herds experienced total population collapse—hundreds of thousands of caribou died. The result was “one of the worst management debacles ever in the State of Alaska, ever.”<sup>28</sup> The population collapse had devastating effects on rural Alaskan Native communities, which depended upon the herds as a primary food source. Several American citizens starved to death.<sup>29</sup>

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26. Western scientists and courts are increasingly recognizing traditional ecological knowledge as a valid form of scientific information. *Id.* at 9 (“Until recently, there was very little literature that addressed how to get Western scientists and educators to understand Native worldviews and ways of knowing as constituting knowledge systems in their own right, and even less on what it means for participants when such divergent systems coexist in the same person, organization, or community.”).

27. A series of laws enacted by Congress in the 1970s, such as the Alaskan National Interest Lands Conservation Act, embedded subsistence hunting rights for Alaskan Natives and non-native rural Alaskans into federal law. These rights are managed by the Subsistence Resource Commission, which reports to Federal Subsistence Regional Advisory Councils and the Federal Subsistence Board. Alaska maintains a parallel system, which centralizes authority in the Board of Game and Fish and incorporates a broader focus on non-native users, including game hunters from other states or countries.

28. Telephone Interview with Jim Dau, Wildlife Biologist for Alaska Department of Fish and Game (retired) (July 25, 2017) (on file with author), *quoted in* BRADSHAW, *supra* note 8 at 13.

29. Today, caribou remain the primary source of sustenance for between forty and fifty remote Alaskan Native communities, which can only be reached by airplane, boat, snowmachine, or sled dog team. Villagers hunt caribou using snowmachines in the winter and powerboats or all-terrain vehicles in the summer and fall. ERNEST S. BURCH JR., CARIBOU HERDS OF NORTHWEST ALASKA, 1850-2000, at 45 (Igor Krupnik & Jim Dau eds., 2012).

## 2. “Scientific” management at odds with social realities

After the population collapse, a complex arrangement between Federal Subsistence Advisory Boards and the Alaskan Board of Game emerged to govern hunting and fishing regulations. Various stakeholders would argue before the State Board of Game, which was “not very productive” because the groups had different interests, essentially leaving management to the game boards.<sup>30</sup>

The Agency turned toward a scientific approach to herd management—releasing annual hunting licenses by using mathematical models of herd size based on field data collected by biologists in helicopters over a few days. The licensure process was a top-down effort that prioritized data while neglecting many on-the-ground realities of rural Alaskan life.<sup>31</sup>

For instance, the agency refused to give permits to at least one Alaskan Native community because they did not appear at an agency-sponsored meeting. Although the agency had failed to notify that community about the meeting, the agency nevertheless refused to issue hunting licenses to the group, making them choose between breaking state hunting laws or starving. In 1970, the Western Arctic Herd numbered 243,000, but dropped to 75,000 by 1976. There was tremendous distrust and anger among the various stakeholders. It was clear that using the best-available scientific and mathematical models for herd management was not working.

In 1994, ADFG hosted a multi-day workshop to determine objective ways to assess caribou harvest levels.<sup>32</sup> After hours and in the hallways between sessions, participants began to discuss creating a working group devoted to the issue. Collaborative strategies were in their infancy in Alaska. Some state employees were familiar with the concept from their experience engaging with Canadians, whom a former state wildlife biologist described as “a decade ahead of Alaskans in terms of working groups.”<sup>33</sup> Eventually, lower-level agency employees from rural Alaska gradually formulated a different model for generating social

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30. Interview 1 (on file with author).

31. BURCH, *supra* note 29, at 44.

32. Dau, *supra* note 28.

33. *Id.*

acceptance of herd management policies.<sup>34</sup> They relied on relationships, creating a stakeholder collaboration that met regularly to discuss herd conditions. State and federal agency officials, hunting guides, and representatives from the Alaskan Native communities were some of the parties who comprised the stakeholder collaboration.

### 3. *The emergence of a stakeholder collaboration*

A small group hammered out the concept and structure of the Western Arctic Caribou Herd Working Group (WACHWG), the focus of which was to have field biologists and affected parties from the primary interests come together. The group sought to connect researchers and those reliant on caribou and to encourage them to have an informal, “nuts and bolts” discussion of the population, to offer a unified set of recommendations to the Board of Game that would improve its decision-making. A founding member of WACHWG noted, “We never envisioned anything formal. We wanted it to be informal, because that’s the way villages work[;] that’s what people were comfortable with.”<sup>35</sup> The WACHWG intentionally did not have a chair, seeking to avoid hierarchy. It also met in various rural villages, which allowed the local villagers to attend meetings.

For several years, a group of up to nine people would gather for a day in Kotzebue or another rural location to discuss forming the group. As the idea solidified, it found a receptive source in John Coady, the Supervisor for Region 5 of the ADFG, who lived through the caribou population collapse debacle in the 1970s. Coady allocated a modest amount of the existing regional budget to convene meetings, assigned an employee to the collaboration, and, as one official noted, “had enough moxie for people to take this seriously.”<sup>36</sup>

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34. ROBERT J. MCMONAGLE, *CARIBOU AND CONOCO: RETHINKING ENVIRONMENTAL POLITICS IN ALASKA’S ANWR AND BEYOND 2* (2008) (“[U]sing strictly cost-benefit analysis to ‘solve’ conflicts with conflicting energy and environmental implications is a problematic way to go. Actual costs and benefits in these equations tend to be too nebulous or demonstrably one-sided.”).

35. Dau, *supra* note 28.

36. *Id.*

Early members of the collaboration were poignantly aware of the challenges involved in forming a credible group. A former ADFG employee recalls:

It was really tough early on. We were acutely aware of the problems with us picking and choosing representatives of the various user groups, indigenous people, guides, transporters, and industry. We realized that if we picked the representatives of the group, it would lose a lot of its credibility. Our hand-picked representatives would just be seen as people friendly to Fish and Game, which would undermine the group.<sup>37</sup>

The group eventually decided to include twenty voting chairs representative of the public. It recognized that it could not give a seat at the table to every interest, so it began with the groups most directly dependent on the caribou and worked out from there. There were forty to fifty communities that depended upon caribou, so the Board adopted the advisory system developed by the State of Alaska many years before, as a model to structure native subsistence users' representation.<sup>38</sup>

During initial discussions on establishing some type of co-management group, some Native Alaskan participants expressed their desire to have legal authority to promulgate regulations.<sup>39</sup> They wanted to be equal partners with the State of Alaska and federal agencies in managing the caribou herd. Agency officials responded that co-management was impossible, as there was no way that state or federal agencies could cede or share legal management authority with them or any other entity.<sup>40</sup> Because of the inability for agencies to share authority, two leaders of the Alaskan Native community users dropped out of the group.<sup>41</sup>

There was also internal resistance within the agency, as some employees feared that WACHWG could become too influential and undermine agency influence. Initially, some federal agencies were mildly supportive, but did not have time or money to participate fully in the 1990s.<sup>42</sup> One interviewee remembers that a U.S. Fish and

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37. *Id.*

38. *Id.*

39. MCMONAGLE, *supra* note 34.

40. Dau, *supra* note 28.

41. *Id.*

42. *Id.*

Wildlife Service manager “came to every meeting [with the attitude] ‘We can’t do this. We can’t do this. There is no legal way to share authority. There is no way to do this.’”<sup>43</sup>

Working slowly to build trust and overcome resistance, the WACHWG eventually made progress. Initially, agency organizers envisioned meetings as an opportunity to defend agency decision-making. They imagined that agency biologists would educate indigenous hunters about herd conditions to create greater social acceptance when the tighter hunting restrictions were necessary.

Over time, agency officials stopped talking and started listening. Hunters and Alaskan Native communities shared on-the-ground observations and traditional ecological knowledge with biologists and agency officials.

WACHWG created a subcommittee to draft a cooperative management plan, which was released in 2003 and continues to be periodically reviewed and updated.<sup>44</sup> The plan envisions all stakeholders—including state, federal, corporate, and private landowners and resource managers—working together to carry out the group’s goals by developing cooperative agreements, sharing resources, and providing support in implementation.<sup>45</sup>

Today, WACHWG is a collaboration between stakeholders interested in the long-term conservation of the Western Arctic Caribou Herd, the ecosystem upon which the herd is dependent, and the traditional and other uses thereof.<sup>46</sup> Stakeholders include “subsistence users, other Alaskan hunters, reindeer herders, hunting guides, transporters, and conservationists” along with agency staff managers, natural resource managers, and biologists who act as consultants to the group—all of whom are knowledgeable about, interested in, and care for the management and conservation of the Western Arctic Caribou Herd.<sup>47</sup>

The group holds a meeting once a year, allowing biologists to update stakeholders on the status of the health and population of

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43. *Id.*

44. W. ARCTIC CARIBOU HERD WORKING GRP., *supra* note 21, at 1.

45. *Id.* at 6, 30.

46. W. ARCTIC CARIBOU HERD WORKING GRP., *Mission*, <https://westernarcticcaribou.net/mission/> (last visited Feb. 23, 2020).

47. W. ARCTIC CARIBOU HERD WORKING GRP., *About*, <https://westernarcticcaribou.net/> (last visited Feb. 23, 2020).

the caribou, the range conditions, and other matters affecting the herd.<sup>48</sup> Meetings focus on management and information transfer, with people talking about the issues they observe with respect to caribou. A typical meeting might include a specialist presenting information on the impact of climate, transportation, or public land use planning, or elders addressing the group drawing upon traditional ecological knowledge disseminated through the generations.<sup>49</sup> There is a technical committee that meets a day prior to the meeting to discuss “nuts and bolts, biology and ecology,”<sup>50</sup> along with other subcommittees, which meet as needed throughout the year.<sup>51</sup>

One founder notes that WACHWG has shifted away from the original conception of connecting field biologists with resource users and towards including agency staff members with little on-the-ground experience:

Now, there may be 75-100 agency staff at the annual meetings, some administrators and some biologists—none of whom more than occasionally do field work on this caribou herd. It has become a must-attend annual meeting populated mostly by agency staff who have little direct involvement working with this caribou herd, except for administrative stuff.<sup>52</sup>

The informal tenor of early meetings became more structured over time: today there is a chair, co-chair, facilitator, and several note-takers for each meeting.<sup>53</sup>

Although WACHWG has over 100 people attending meetings, a National Park Service biologist believes that the “delicate balance between being unwieldy and everyone having a voice” is struck largely through having a facilitator and co-chairs who are adept at moving the ball forward.<sup>54</sup> The location shifted from a rotating schedule of rural villages to Anchorage to limit the expenses of agency officials attending. WACHWG has collaborated with different federal agencies to implement a cooperative management

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48. *Id.*

49. *Id.*

50. Interview 1, *supra* note 30.

51. W. ARCTIC CARIBOU HERD WORKING GRP., *About*, *supra* note 47.

52. *Dau*, *supra* note 28.

53. *Id.*

54. Interview 3 (on file with the author).

plan to effectuate cooperation among resource management agencies and all people who value and depend on the caribou.<sup>55</sup>

#### 4. Current conditions

Today, WACHWG—and caribou at the center of it—are facing challenging times due to factors external to the group. Between 2003 and 2011, the population of the Western Arctic Caribou Herd declined an average rate of 4–6% annually. As of 2011, the population of the herd numbered 325,000.<sup>56</sup> The caribou were traditionally used primarily for subsistence, and today around 10,000 to 15,000 caribou each year are killed for that purpose. Additionally, nonresidents and nonlocals kill approximately 500 to 800 caribou each year in hunting expeditions.<sup>57</sup> *The New York Times* recently reported that a controversial predator control regime implemented by the state—killing wolves, with the hope of increasing the number of caribou—had failed.<sup>58</sup>

Additional concerns arise due to resource development and mining expansion westward from Prudhoe Bay into the National Petroleum Reserve-Alaska. Such continued expansion of mining would require cutting a transportation corridor through the herd's range, which could affect the migration and distribution of the herd. Additionally, increased tourist aircraft overflight may stress the caribou before the winter months at a time when they should be gaining fat reserves.<sup>59</sup>

Social, cultural, and traditional values are also at risk. Rural interior communities tend to be quite small and deeply rooted in traditional practices. Climate change effects and conflict over natural resources development are rapidly changing traditional ways of life.<sup>60</sup> As elders die, traditional knowledge is lost.<sup>61</sup> Rural communities are struggling to adapt to technological and social

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55. W. ARCTIC CARIBOU HERD WORKING GRP., *supra* note 21, at 2.

56. *Id.* at 4–5.

57. *Id.* at 1.

58. Joanna Klein, *Protected Wolves in Alaska Face Peril From Beyond Their Preserve*, N.Y. TIMES (Jul. 14, 2017), <https://www.nytimes.com/2017/07/14/science/wolves-alaska-yukon-charley-preserve.html>.

59. W. ARCTIC CARIBOU HERD WORKING GRP., *supra* note 21, at 5.

60. OFFICE OF INDIAN ENERGY, U.S. DEP'T OF ENERGY, NATIONAL STRATEGY ON THE ARCTIC REGION (NSAR)—TEN YEAR RENEWABLE ENERGY STRATEGY 23 (2014) (“Concerns were expressed about melting permafrost leading to sinking villages and sea level rising.”).

61. *Id.* at 39.

change.<sup>62</sup> There is no road access to many rural interior villages.<sup>63</sup> Residents and government officials must use airplanes, boats, snow machines, and sled dog teams to travel to more populated areas, which are hours away. Pilots must fly in the fuel to power these vital forms of transportation.<sup>64</sup>

Food security remains a primary concern in rural Alaska.<sup>65</sup> Modern inhabitants of rural villages continue to live a subsistence lifestyle during times of food scarcity, depending upon hunted and harvested foods for the majority of their diet.<sup>66</sup>

Against this mix of social, ecological, and economic challenges, the WACHWG provides a valuable management tool. According to interviews, village residents feel more positively about agency officials who participate in the group.<sup>67</sup> The structural design that facilitated that trust, however, is imperfect. Because many group members have served for many years, there is infrequent turnover, which reduces the potential for information sharing through group members returning to their villages to share what they have learned.

The group also comes at a professional cost to the biologists who participate because it lessens the time they can spend in the field. WACHWG founder Jim Dau notes, "We invested tremendous time and energy to initially establish and later support this group, and we paid dearly in terms of internal political capital."<sup>68</sup> Nevertheless, the two-decades-long collaboration has built relationships among previous adversaries and developed long-absent trust between Alaskan Native communities and agency officials. Decades of relationship-building provide a solid

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62. *Id.* at 41.

63. Interties, roads, and basic infrastructure in villages are ongoing, critical needs in the region.

64. *Id.* at 17 ("Another concern was the shallowing of the upper Kobuk rivers, which requires fuel to be flown in.").

65. Several quotations are drawn from words spoken directly by members of Alaskan Native communities. In 2014, The U.S. Department of Energy, Office of Indian Energy held a series of seven tribal consultation sessions in various Alaskan cities. Notably, these were more populous places, not the smallest villages, although some sent representations to the sessions. Between two and twenty-two people attended each meeting. Minutes of what residents said in the meeting highlights some of the concerns. *Id.* at 2-3.

66. *Id.* at 37.

67. Dau, *supra* note 28.

68. *Id.*

foundation for decision-making to meet the current risks to the herd and indigenous residents to rural Alaska.

### *B. Agencies' Use of Collaborative Analysis*

To manage caribou, WACHWG used a broad group of stakeholders to fashion an ongoing solution through collaborative analysis. Indeed, collaborative analysis—the focus of this Article—stems from these stakeholder collaborations.<sup>69</sup> But the working group in Alaska is not alone in employing this analytical approach. There are hundreds of stakeholder collaborations governing the land and natural resources in the United States.<sup>70</sup>

Through collaborations, however, stakeholders and agencies try to avoid litigation and gridlock. Stakeholders commit to creating mutually agreeable recommendations to the agency on how best to manage risk. They hash out disagreements, negotiate, and ultimately compromise. One court noted that “[p]ublic participation is, by nature, messy.”<sup>71</sup> It is a time-consuming, inexact process filled with ups and downs. The group issues recommendations and feedback to the agency on an ongoing basis, which allows the agency to assess prior decisions and update assessments in light of changing conditions.<sup>72</sup>

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69. Stakeholder collaborations are “a group of people with strong interests in, yet differing views on, the proper management of a particular, localized group of lands or resources, committed in writing to working together to create mutually agreeable recommendations for managing the resource across changing conditions on an ongoing basis.” Karen Bradshaw, *Agency Engagement with Stakeholder Collaborations, in Wildfire Policy and Beyond*, 51 ARIZ. ST. L.J. 437, 445 (2019).

70. As an Academic Consultant for ACUS in 2017, I led a team of research assistants for three months in meeting with agency employees, touring public lands, and conducting dozens of semi-structured interviews with stakeholders and agency officials. We surveyed statutes, executive orders, and regulations to assess how many collaborations existed. To gain a real world perspective on the uses and limitations of democratic risk management, I traveled to Alaska to observe how agency officials manage to incorporate social and moral inputs into risk management decisions. The project culminated in an ACUS Office of the Chairman report, *Stakeholder Collaborations for Managing Land and Natural Resources*. See BRADSHAW, *supra* note 8. That report and a subsequent law journal article overviewed what collaborations are, who uses them, and in which contexts. *Id.* (analyzing stakeholder collaborations through a survey of laws and regulations requiring collaboration, review of primary documents, and qualitative data gathered through interviews and attendance at agency meetings); Bradshaw, *supra* note 69, at 456.

71. *W. Watersheds Project v. Kraayenbrink*, 538 F. Supp. 2d 1302, 1313 (D. Idaho 2008).

72. See BRADSHAW, *supra* note 8.

Collaborations do not produce clear winners and losers. Stakeholders generally end up with better outcomes than if they had not participated, but not their ideal outcome.<sup>73</sup> Through such processes of negotiation, decisions shift from Kaldor-Hicks efficiency (the group is overall better off than the status quo)<sup>74</sup> to Pareto superior outcomes (some people are better off relative to the status quo and no one is worse off).<sup>75</sup> The group voluntarily smooths the distributional effects of decisions by re-allocating the benefits and harms. For example, a wildlife advocacy organization may agree to compensate ranchers whose livestock are killed by wolves reintroduced to an area, even though the agency managing wolves has no legal obligation to compensate ranchers.<sup>76</sup>

Stakeholder collaborations provide a standing, readily available cross-section of key constituencies to assess and manage new and emerging challenges. They also serve to generate bottom-up or crowdsourced information about risk, which may include information absent from the analytic-data approach.<sup>77</sup> Temporally, collaborative decision-making sometimes collapses the assessment and management phases of risk assessment, removing an arbitrary distinction that need not exist. Collaborations' ongoing, iterative nature differentiates them from other forms of public-private cooperation, such as linear notice-and-comment periods or negotiated rulemaking. There is no endpoint to stakeholder collaborations—no moment at which the stakeholders must decide on a final policy decision. The focus, objective, and composition of the group may shift dramatically over time.<sup>78</sup>

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73. SHANNON K. ORR, ENVIRONMENTAL POLICYMAKING AND STAKEHOLDER COLLABORATION 54 (2013).

74. MATTHEW D. ADLER & ERIC A. POSNER, NEW FOUNDATIONS OF COST-BENEFIT ANALYSIS 21–22 (2006).

75. *Id.* at 5.

76. ORR, *supra* note 73, at 136–39.

77. *See infra* Section II.B.

78. Karen Bradshaw Schulz & Dean Lueck, *Contracting for Control of Landscape-Level Resources*, 100 IOWA L. REV. 2507, 2542–43 (2015) (describing how the Malpai Borderlands cattle ranching community leverages preexisting relationships formed around grazing practices to manage wildfire risk).

Many agencies rely heavily on stakeholder collaborations to inform risk management policy.<sup>79</sup> They credit collaboration with producing substantively better decisions informed by different perspectives and a broader information base.<sup>80</sup> Instead of agency officials making value judgments and guesses as to distributional consequences, they float potential policies past the clearly identifiable stakeholders who would feel their serious, localized effects.<sup>81</sup> Early and meaningful public engagement leads to greater social acceptance of decision-making, and potentially less litigation.<sup>82</sup> Agency employees describe working with stakeholder collaborations as “vital” and note that “we couldn’t do our jobs without it.”<sup>83</sup>

Agencies have long operated amidst deep uncertainty. Over time, they have learned how to make controversial, high-stake decisions that will prove politically and socially acceptable. For instance, agencies use a variety of collaborative governance tools (e.g., regional bodies, listening sessions, notice-and-comment periods, and informal relationships) that involve some degree of collaboration.<sup>84</sup> Agencies frequently use stakeholder collaborations—coordinating early and often with the private groups that will most bear the costs or benefits of agency decisions—to inform policymaking in conditions of frequent change, localized high stakes, and deep uncertainty.<sup>85</sup> Although

79. Although ubiquitous in practice, discussion of collaborative analysis as an alternative to top-down approaches is virtually absent from legal scholarship on risk management. For a discussion of related literatures, see *infra* Section II.B. Existing risk management theory posits that agencies use scientific data to set standards, then employs cost-benefit analysis to assess various policy tools to achieve the standard. This account is correct but incomplete—it overlooks the vital step of qualitative inputs into the policymaking practice.

80. See *infra* Section II.B.

81. See *infra* Sections II.A, II.B.

82. Department Hearings and Appeals Procedures; Cooperative Relations; Grazing Administration—Exclusive of Alaska, 60 Fed. Reg. 9894, 9924 (Feb. 22, 1995) (“Experience has shown that the greater and more meaningful the participation during the formulation of decisions and strategies for management, the higher the level of acceptance and thus the lower the likelihood of a protest, an appeal, or some other form of contest”); see also *infra* Section III.C; .

83. Bradshaw, *supra* note 69, at 442 n.13.

84. For a typology of collaborative techniques, and their features, used in land and resource management, see BRADSHAW, *supra* note 8, at 15 fig.1.

85. See Christopher DeMuth, *Can the Administrative State be Tamed?*, 8 J. LEGAL ANALYSIS 121, 143-45, 156-57 (2016); Orly Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*, 89 MINN. L. REV. 342, 376-79 (2004).

many scholars are doing the important work of documenting agencies' use of these tools, they have been slow to situate them next to cost-benefit analysis in the pantheon of decision-making tools.

Collaborative analysis is especially relevant for high-stakes decisions for a small and localized population (i.e., management of specific public lands or policing practices). It is less sensible either in circumstances with uniform, diffuse effects without localized expertise (i.e., vaccine recommendations) or in circumstances with a need for centralized, top-down, unilateral control (i.e., military action). Agencies widely studied by administrative law scholars, such as the Environmental Protection Agency and Office of Workplace Health and Safety, tend to use cost-benefit analysis because the scale of policy decisions tracks guidelines for using cost-benefit analysis. Agencies controlling physical resources with a set geographic position tend to use collaborative analysis. These include the Bureau of Land Management, National Park Service, and Forest Service. Under a collaborative analysis approach, the agency is constantly assessing and managing risk in consultation with stakeholders. This real-time feedback mechanism creates adaptiveness and partnerships unavailable through cost-benefit analysis alone.

To provide an example of how response can occur prior to assessment, consider oil spills. Potentially responsible parties (who spilled the oil) provide funding for natural resources trustees (tribes, federal agencies, and states) to initiate clean up and recovery efforts immediately. All parties benefit from early response, rather than waiting the many years necessary to provide a cost assessment of risks. But this option is only available when potentially responsible parties and trustees agree to work jointly on recovery—a collaborative analysis technique.<sup>86</sup>

Agencies' need to incorporate stakeholder input into policy analysis is important for sizeable risks, which risks will be internalized by concentrated, identifiable groups.<sup>87</sup> Stakeholder

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86. Karen Bradshaw, *Settling for Natural Resource Damages*, 40 HARV. ENVTL. L. REV. 211 (2016).

87. Stakeholders are unlikely to engage in collaborations for low-stakes outcomes; similarly agencies (and even the President) may be loath to share decision-making for

input can increase agencies' understanding of how citizens value various criteria, broaden the perspectives brought to bear on an issue. Collaborative processes can also generate better data, increase social acceptance of decisions, overcome group polarization, facilitate resource pooling, and allow for continuously updating policy.<sup>88</sup> Core principles from disparate academic literatures foreshadow collaborative analysis by demonstrating that collaborative approaches have potential to produce more efficient, just, and cost-effective policymaking. My research indicates that collaborative analysis enables agencies to leverage the knowledge and capabilities of stakeholders, engage in iterative analysis, and pre-test the social acceptability of decisions prior to implementation.<sup>89</sup>

Collaborative analysis intersects with cost-benefit analysis in context-specific ways: sometimes the tools act in tandem, sometimes one substitutes for the other.<sup>90</sup>

Although various models of collaborative analysis exist, the most visible form is of a stakeholder collaboration consulting with an agency on the decision-making. A stakeholder collaboration is a group of people with strong interests in, yet differing views on, an important issue. For example, stakeholder collaborations can form around the management of a localized group of lands or resources, between members who are formally committed to working together to create mutually agreeable recommendations for managing the resource across changing conditions.<sup>91</sup> Landowners, industrial land users, nongovernmental organizations, state and tribal neighbors, hunters, conservationists, and others form collaborations as a structural vehicle for coming together to discuss issues related to specific lands or resources.<sup>92</sup>

In such groups, a strong interest in the outcome of the decision unifies differing parties—essentially, the parties involved in the collaboration are those who will bear the detriments of mismanaged risk. Stakeholder collaborations develop rules and

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very high-stakes outcomes. Thus, collaborative analysis likely operates best in between these extremes.

88. See *infra* Section II.B.

89. Bradshaw, *supra* note 69.

90. See *infra* notes 98–103.

91. See BRADSHAW, *supra* note 8, at 10.

92. *Id.* at 3.

norms for internal governance, such as organizing monthly meetings and determining rules for dispute resolution. Over time, the collaboration identifies specific areas of concern, shares perspectives, considers data, creates reports, and hashes out recommendations on how the relevant management agency should approach a problem.

Agencies work closely with collaborations but are *not* themselves members of the collaboration.<sup>93</sup> Instead, agencies play a supportive role, such as by initiating the formation of a collaboration, providing meeting space, carrying out studies, assigning personnel to act as liaisons between the collaboration and agency, sharing information, and generating funding.<sup>94</sup> Importantly, agencies can provide stakeholders with data and information on how to assess it. Decision-making under this model is an iterative process, unfolding over decades in response to ever-changing natural conditions. Stakeholder collaborations often work with agencies to achieve multiple objectives and, throughout it all, strive to build trust and maintain positive, working relationships.

Agencies also informally share a portion of their decision-making authority with collaborations when they engage stakeholders in meetings and working groups to reach mutually agreeable decisions. The agency is legally required, however, to retain sole decision-making authority, even when making decisions in consultation with collaborative groups.<sup>95</sup>

## II. COMPARING COLLABORATIVE ANALYSIS WITH COST-BENEFIT ANALYSIS

This Part compares and contrasts collaborative analysis with cost-benefit analysis (as the most familiar placeholder for the

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93. One agency respondent raised the important point that this definition excludes forms of collaboration such as regional planning bodies, in which various government entities collaborate to explore options and share information. Although such a body would be outside the definition of stakeholder collaborations as defined in this article since it includes on government stakeholders, *inter-government collaborations* undoubtedly exist among federal, tribal, state, and local governments, and play an important role in managing a variety of resources.

94. See BRADSHAW, *supra* note 8, at 4.

95. For a discussion of the Federal Advisory Committee Act and other rules limiting the extent to which agencies can defer to external groups, see *infra* notes 160–162 and accompanying text

broader category of numerical decision-making tools). I outline the benefits of collaborative analysis (Section II.A.) and arguments against it (Section II.B).

### A. *The Benefits of Collaborative Analysis*

#### 1. *Incorporating moral inputs*

For sixty years, law and economics scholars have struggled to respond to critiques that cost-benefit analysis alone, without social or moral context, can lead to perverse outcomes.<sup>96</sup> Many focus on empirical data: better evaluations, more convincing numbers, weighting factors to reflect moral judgments.<sup>97</sup>

Traditional accounts of cost-benefit analysis include a variety of tools to capture people's values, such as "willingness to pay."<sup>98</sup> Collaborative analysis hands the problem to be managed over to the people most affected by it. It allows that group to hash out a mutually acceptable policy, which implicitly represents the aggregate of their collective preferences weighted to reflect the relative strength of the individuals within the group. Collaborative analysis can serve as either a stand-in for cost-benefit analysis, or a complement to it.

In practice, agencies *must* incorporate distributional concerns into policymaking.<sup>99</sup> Widespread attention to distributional weighting as the mechanism through which this can occur fails to consider the viability of alternative and complementary tools for incorporating such concerns into decision-making. Indeed,

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96. See also Frank Ackerman et al., *Applying Cost-Benefit to Past Decisions: Was Environmental Protection Ever a Good Idea?*, 57 ADMIN L. REV. 155, 157 (2005) (describing that blind application of cost-benefit analysis could lead to questionable decisions). For example, a strict cost-benefit analysis might encourage people to smoke so they would live less long and thus require fewer healthcare expenditures.

97. Distributional weighting involves assigning various values into cost-benefit analysis to reduce income effects, effectively lessening inequality and wealth considerations. See David A. Weisbach, *Distributionally Weighted Cost-Benefit analysis: Welfare Economics Meets Organizational Design*, 7 J. LEGAL ANALYSIS 151, 151-52 (2015) (overviewing the key arguments in the lively debate about distributional weighting); see also *infra* Section II.C.

98. "Willingness to pay" describes economists asking people what they are willing to pay for various goods, then using the input to calculate the compensating variation, or the amount that the individuals would be willing to pay to start or stop the project. Matthew Adler, *Incommensurability and Cost-Benefit Analysis*, 146 U. PENN. L. REV. 1371, 1378 (1998).

99. A variety of laws, executive orders, and regulations *require* agencies to incorporate distributional concerns through qualitative input. See *infra* Part III.

collaborative analysis captures the distributional and value questions that economists have struggled to incorporate into a cost-benefit analysis. Agencies may be using collaborative analysis instead of top-down policymaking in situations where distributional questions should drive policy outcomes, suggesting that distributional weighting within cost-benefit analysis may be relatively unimportant if agencies switch to an alternative tool when policy requires distributional assessments that drive choices.

There are many reasons to think that direct qualitative input by stakeholders might better reflect their actual preferences than attempts to quantify their thoughts through contingent valuation or other data-driven tools. Some people respond hostilely to questions posed by economists with clipboards standing in front of supermarkets, refusing to answer the question or offering extraordinary high or low values.<sup>100</sup> Survey techniques place even willing participants in an artificial situation, likely thinking of their drive home or dinner plans and not having an opportunity to meaningfully consider information about the questions posted for a meaningful period. Moreover, surveying creates isolation, focusing only on the individual being asked the question. People learn about their own values through interaction; the group dynamics of collaborative analysis allow individuals to refine and improve their assessments in relation to the perspectives of others.

Making real-world tradeoffs within social, ecological, and economic realities removes the artificiality of contingent valuation and other survey methodologies.<sup>101</sup> I cannot tell you with certainty whether I value Mt. Shasta at \$100 million or \$1 billion or \$100 billion. But I could certainly make choices about what I would be willing to trade to prevent strip mining the dramatic mountain. Would I trade the total national gross domestic product? No. Some missed opportunities for growth within the relatively impoverished local economy? Certainly. Within this spectrum of these extremes, I could make refined and detailed judgments, particularly if allowed to consider the issue for an extended time

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100. ROBERT CAMERON MITCHELL & RICHARD T. CARSON, USING SURVEYS TO VALUE PUBLIC GOODS: THE CONTINGENT VALUATION METHOD 30-8 (1989).

101. "In day-to-day life, we routinely make judgments of overall well-being, comparing losses to some of our friends, colleagues or family members with gains to others." ADLER & POSNER, *supra* 74, at 41.

in collaboration with other committed stakeholders. As a result, the real-world nature of making tradeoffs that reflect my internal values is almost certainly more accurate than attempting to assign dollar values to things that the average person does not consider quantifiable.

For these reasons, collaborative analysis can serve as a formal or informal complement to cost-benefit analysis.<sup>102</sup> One could imagine agencies using stakeholder groups to weigh various kinds of data, then input stakeholder weighting into the cost-benefit analysis. Matthew Adler and Eric Posner describe the potential for agencies to “launder” public preferences, removing heuristic biases and idiosyncratic or antisocial inputs.<sup>103</sup> Although Adler and Posner consider agency officials themselves performing this function, under the collaborative analysis models, agencies task stakeholder groups with sorting through various preferences.

## 2. *Facilitating Pareto superior outcomes*

Collaborative analysis can shift policy outcomes from satisfying Kaldor-Hicks criteria (the net welfare is higher) to Pareto superior decisions (all parties are at least equally well off) by prompting trades among potential winners and losers. Stakeholder groups provide a government-sponsored forum for distributional negotiations, which top-down decision-making cannot achieve in isolation.

Consider the difference between top-down and democratic policymaking for a decision between logging a public forest or conserving it for wildlife preservation. Under a top-down model, the agency might conduct a cost-benefit analysis. If logging produced a gain bigger than the costs associated with losing wildlife habitat, the decision would satisfy the Kaldor-Hicks criteria, and the agency would permit the logging operation.

Under a collaborative analysis model, a stakeholder group comprising both the timber company and the environmental nongovernmental organization would vote on a recommendation of whether to log or not. To secure the vote of the environmental NGO, the timber company might agree to place a conservation

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102. *See id.* at 73–79.

103. *Id.* at 129–49.

easement on private land to provide wildlife habitat in perpetuity. If the NGO found this a satisfactory deal, they would vote yes. The stakeholder group would issue a recommendation that the Forest Service approve the logging operation, and it would approve the project. Through the democratic process, the parties will negotiate until they reach a Pareto superior outcome, in which both parties are better off than the status quo.

The imprimatur of a government-sponsored forum allows polarized parties to retain integrity in the eyes of their constituencies while nevertheless making tradeoffs. Stakeholders can credibly report to their constituencies that the cost of not participating in a collaboration is greater than what they might concede to reach agreement. The threat of unfavorable agency action absent an agreement drives all parties towards increased openness to negotiation, relative to direct bargaining. Moreover, collaboration integrates agency decision-makers into the policy process, and thus they are more likely to accept the stakeholder recommendation, relative to parties saying “we have reached a bargain for you to approve” without agency input. In sum, collaborative analysis opens the door to direct negotiation for redistribution of benefits to secure policy approvals.

### *3. Inclusiveness of diverse perspectives and talents*

Cost-benefit analysis uses a language (math) in which relatively few Americans are fluent. This unintentionally serves to shut out all but the highly educated from policy spaces. Scholars who conflate “sound” decision-making with numerical analysis discount vast swaths of the human potential. Valuable alternative data exist. Dogged insistence on numerical analysis as the gold standard for agency and judicial decision-making threatens to narrow the array of human potential to a small subset of skills. Tapping into these diverse sources of information by engaging non-agency actors through the process of democratic risk management broadens the pool of information to inform policy choices.

Diversity advocates often frame arguments in terms of fairer, more just policy and the related goal of democratic legitimacy. Here, I advance a related but distinct basis for a diversity of inputs into agency decision-making: that incorporating diverse perspectives in agency decision-making can make substantively

better policy by introducing a broader base of information on which to base a decision.

Useful talents are distributed inequitably across the population. So too is genius. Thus, over-emphasizing a category of people in government fails to capture the collective potential of a population. Leveraging the collective skills and strengths dispersed throughout society opens the door to more information and better decisions.<sup>104</sup> Recognizing the diffusion of skill may also serve to increase social cooperation and a more democratic government by acknowledging that different people bring different traits to the table, the sum of which is greater than its parts. No one country, social group, or segment of society has a monopoly on all the relevant, necessary knowledge in the world

It is easy for those resistant to this argument to jump to logical extremes, suggesting, for example, the influence of a single idiosyncratic person or group with questionable “data.” Although such defensiveness is understandable, it can also be counterproductive to achieving desired outcomes. Law has long incorporated roles for nonacademic data to inform policy. And it should. Here, I take the argument a step farther and explore how law institutionalizes the input of nonacademic data into regulatory decisions. As outlined below, the formalized incorporation of data varies wildly according to its source.

Risk perception literature within social psychology finds that groups of stakeholders informed by risk experts can generate the best-available decisions.<sup>105</sup> Robin S. Gregory has conducted decades of experiments on how stakeholder involvement can influence agency decision-making.<sup>106</sup> Gregory’s

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104. Dan M. Kahan et al., *Fear of Democracy: A Cultural Evaluation of Sunstein on Risk*, 119 HARV. L. REV. 1071, 1103 (2006) (reviewing CASS R. SUNSTEIN, *LAWS OF FEAR: BEYOND THE PRECAUTIONARY PRINCIPLE* (2005)). See, e.g., R. GREGORY ET AL., *STRUCTURED DECISION MAKING: A PRACTICAL GUIDE TO ENVIRONMENTAL MANAGEMENT CHOICES* (2012) [hereinafter *STRUCTURED DECISION MAKING*]; Robin S. Gregory & Ralph L. Keeny, *Making Smarter Environmental Management Decisions*, 38 J. AM. WATER RESOURCES ASS’N 1601 (2002) [hereinafter *Environmental Management Decisions*]; Robin S. Gregory, *The Troubling Logic of Inclusivity in Environmental Consultations*, 42 SCI., TECH., & HUM. VALUES 144 (2017) [hereinafter *The Troubling Logic*].

105. Kahan et al., *supra* note 104.

106. See, e.g., *STRUCTURED DECISION MAKING*, *supra* note 104; *Environmental Management Decisions*, *supra* note 104. A robust social science on risk perception studies the way that people assess risk. Kahan et al., *supra* note 104.

work on “‘science-based, community-supported’ environmental risk policies . . . presents empirical evidence showing that this approach generates outcomes that are more consensual and more defensible from a scientific standpoint than either unguided bottom-up approaches to regulations or highly centralized and insulated top-down ones.”<sup>107</sup> Similarly, Dan Kahan has pushed back against the anti-populist elements of Sunstein’s approach by suggesting that different world views may not reflect heuristic error so much as value differences.<sup>108</sup>

Agency employees tend to share ideological commitments, which may differ from those of the broader public. Introducing external perspectives increases agency cognition of outside views, which can broaden agency approaches.<sup>109</sup> Stakeholder collaborations generate different management ideas than the agency would if acting alone. Competing ideas may lead to extra vetting, resulting in better decisions.

A member of a stakeholder collaboration described the group’s influence on the Forest Service’s approach to the NEPA process:

[T]hey have certain criteria for data, that might not be the most recently available data, but at that agency because of their litigation, they are more comfortable with certain kinds of data that they feel has defended protective actions more. I think that is where the conflict comes. The stakeholders would like to be innovative and use best available science. The Forest Service Agency has reluctance to switch data midstream because it hasn’t been proven in court and might be more vulnerable. We would argue that using best available science would do better in court.<sup>110</sup>

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107. Kahan et al., *supra* note 104 (citing Robin Gregory & Katherine Wellman, *Bringing Stakeholder Values into Environmental Policy Choices: A Community-Based Estuary Case Study*, 39 *ECOLOGICAL ECON.* 37-38 (2001)). Interestingly, Gregory has recently suggested that too much unfiltered stakeholder input can also be counterproductive—a reminder that collaborative analysis is not a panacea against poor decisions. *The Troubling Logic*, *supra* note 104.

108. Kahan et al., *supra* note 104, at 1072 (describing a theory of cultural cognition, which suggests that individuals conform their beliefs about risk to their visions of an ideal society).

109. IAN AYRES & JOHN BRAITHWAITE, *RESPONSIVE REGULATION: TRANSCENDING THE DEREGULATION DEBATE* 87 (1992) (noting that “cooperative open communication may produce more efficient regulatory outcomes because bad arguments and bad solutions are less likely to go unchallenged”).

110. Bradshaw, *supra* note 69, at 479.

This example illustrates a collaboration pushing an agency towards what may, in fact, be an objectively better decision – using the best available science, instead of the more defensive position (i.e., what a court has previously accepted). Ultimately, the collaboration pushed the agency to adopt better quantitative analysis techniques. Agencies' willingness to share decision-making builds relationships and improves the agencies' reputations, which is useful for managing other agency affairs.

#### 4. Generating better data

Stakeholder input increases the likelihood of generating valuable information that might otherwise be unavailable to agencies, which often rely solely on scientifically generated data.<sup>111</sup> Alternative data may include the observations of on-the-ground users of a resource that possess a degree of specialization that outsiders cannot replicate. Consider a few examples: An experienced factory worker could discern how well a machine she maintains is operating by the humming sound it makes.<sup>112</sup> Sailors in the Marshall Island maintained a sophisticated tidal map in their minds that allowed them to navigate great distances without Western navigation tools, a feat so complicated that scientists had to see it to believe it.<sup>113</sup> Villagers in Aneyoshi, Japan, escaped a tsunami by heeding century-old carved stone tablets that warned future generations to escape to higher ground when waves reached a certain level.<sup>114</sup>

These examples illustrate insights can produce information that would be valuable in assessing risk of machine failure, safe sailing conditions, and tsunami evacuation planning. Failure to incorporate institutional or traditional knowledge by these stakeholders would lead to suboptimal decision-making.

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111. CASS R. SUNSTEIN, *VALUING LIFE: HUMANIZING THE REGULATORY STATE* 174 (2014) (noting the value of private entities providing information unavailable to agencies acting in isolation).

112. Michael Barbaro, *Listen to 'The Daily': Disappearing Factory Jobs*, N.Y. TIMES (Oct. 18, 2017), <https://www.nytimes.com/2017/10/18/podcasts/the-daily/factory-jobs.html>.

113. Kim Tingley, *The Secrets of the Wave Pilots*, N.Y. TIMES (Mar. 17, 2016), <https://www.nytimes.com/2016/03/20/magazine/the-secrets-of-the-wave-pilots.html>.

114. Danny Lewis, *These Century-Old Stone "Tsunami Stones" Dot Japan's Coastline*, SMITHSONIAN.COM (Aug. 31, 2015), <https://www.smithsonianmag.com/smart-news/century-old-warnings-against-tsunamis-dot-japans-coastline-180956448/>.

Collaborative analysis provides a forum for agencies to receive and incorporate such pluralistic forms of information.

Various academic literatures provide examples of alternative data that adds real value to risk management and policymaking. The Nobel Prize-winning work of Elinor Ostrom observed that bottom-up rules developed by non-expert resource users outperformed top-down policies informed by scientific information in many natural resource contexts.<sup>115</sup> The related *social ecological systems theory* suggests that ecosystems, local knowledge, people, and property rights institutions are inexorably linked—suggesting that risk approaches failing to incorporate these elements are foregoing valuable information.<sup>116</sup>

Similarly, firms operating within an industry tend to have superior information about that industry, relative to regulators.<sup>117</sup> Jody Freeman has shown how regulators collaborate with regulated entities through negotiated rulemaking.<sup>118</sup> Similarly, a robust literature on public-private partnership and *new governance* documents agencies' willingness to partner with regulated entities, and the benefits of doing so.<sup>119</sup>

Social justice scholars suggest that empowering diverse peoples in decision-making produces policy that is more just and fair. Traditional ecological knowledge—intergenerational information about the natural environment contained in the oral history of indigenous peoples—is increasingly recognized as a legally valid

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115. See generally ELINOR OSTROM, *GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION* (1990). This influential finding has led subsequent scholars to conduct thousands of case studies examining user-created rules to manage risks ranging from poaching to deforestation. See generally *CPR & SES Databases*, INDIANA UNIVERSITY BLOOMINGTON: OSTROM WORKSHOP, <https://ostromworkshop.indiana.edu/resources/library/cpr-ses-databases.html> (last visited Feb. 23, 2020).

116. FIKRET BERKES & CARL FOLKE, *LINKING SOCIAL AND ECOLOGICAL SYSTEMS: MANAGEMENT PRACTICES AND SOCIAL MECHANISMS FOR BUILDING RESILIENCE 2* (1998).

117. *Id.*

118. See JODY FREEMAN & MARTHA MINOW, *GOVERNMENT BY CONTRACT: OUTSOURCING AND AMERICAN DEMOCRACY* (2009); Jody Freeman & Jim Rossi, *Agency Coordination in Shared Regulatory Space*, 125 HARV. L. REV. 1131 (2012); Jody Freeman, *Collaborative Governance in the Administrative State*, 45 UCLA L. REV. 1 (1997); Jody Freeman, *The Private Role in Public Governance*, 75 N.Y.U. L. REV. 543 (2000).

119. See, e.g., Orley Lobel, *New Governance as Regulatory Governance*, in OXFORD HANDBOOK OF GOVERNANCE (David Levi-Faur ed., 2012); Karen Bradshaw Schulz, *New Governance and Industry Culture*, 88 NOTRE DAME L. REV. 2515, 2515 (2013).

decision-making tool.<sup>120</sup> Mary Becker's theory of *relational feminism* suggests that culture overvalues masculine qualities and undervalues female qualities, such as community and relationships.<sup>121</sup> Similarly, *ecofeminism* suggests that environmental policy can only be adequately addressed through increased inclusion of intersectional, traditionally oppressed voices.<sup>122</sup> Inclusion of less-represented groups may prove more efficient too: recent studies suggest that the impoverished are best-positioned to assess the effectiveness of funds deployed to alleviate poverty.<sup>123</sup>

Tapping into these diverse sources of information by engaging non-agency actors through the process of collaborative analysis broadens the pool of information to inform policy choices. Stakeholder groups provide a structured, ongoing, and transparent form of information gathering. They also provide insight into how to frame policies in a manner that will appeal to as many constituencies as possible.

##### 5. Increasing social acceptance

Agency officials believe that decisions they make through collaborative processes benefit from greater social acceptance.<sup>124</sup> Collaborations generally form around controversial issues with deeply entrenched interest groups. Within this adversarial context, decisions informed by collaboration may prove more socially acceptable than those made by agency officials acting alone. Through collaboration, stakeholders negotiate compromises themselves, instead of merely receiving and judging agency

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120. Katie O'Bryan, *The Appropriation of Indigenous Ecological Knowledge: Recent Australian Developments*, 1 MACQUARIE J. INT'L & COMP. ENVTL. L. 29, 44-45 (2004). Some commentators view traditional ecological knowledge as valuable in bolstering community resilience to climate change. Erik Gómez-Baggethun et al., *Traditional Ecological Knowledge and Global Environmental Change: Research Findings and Policy Implications*, 18 ECOLOGY & SOC'Y 72 (2013).

121. Mary Becker, *Patriarchy and Inequality: Towards a Substantive Feminism*, 1 U. CHI. LEGAL F. 21, 47-49 (1999).

122. Greta Gaard & Lori Gruen, *Ecofeminism: Toward Global Justice and Planetary Health*, 2 SOC'Y & NATURE 1 (1993); VANDANA SHIVA, *STAYING ALIVE: WOMEN, ECOLOGY AND DEVELOPMENT* 44-46 (1988).

123. Johannes Haushofer & Jeremy Shapiro, *The Short-term Impact of Unconditional Cash Transfers to the Poor: Experimental Evidence from Kenya*, 131 Q. J. ECON. 1973 (2016).

124. Bradshaw, *supra* note 69, at 479-80; AYRES & BRAITHWAITE, *supra* note 109, at 87-88 ("Conditions of trust and cooperation increase the prospects that the parties will end up with a commitment to making the agreed solution work").

decisions. In this sense, an agency official described collaborations as “do[ing] our work for us” by building social consensus around controversial decisions.<sup>125</sup>

On a related point, agencies believe they are less likely to be sued, or to lose a lawsuit, for a decision that accords with a set of recommendations from a stakeholder collaboration. One official noted: “Collaboration is not the panacea for getting rid of lawsuits. But it sure as hell makes [that risk] a lot lower.”<sup>126</sup> Lessened litigation risk is partially explainable by the positive relationships that emerge in groups, and the expectation that the group—and relationships between its members—will persist in the future. Also, entrenched interests necessarily accept up-front that compromise is the expected outcome of collaboration. Potential litigants may believe that their negotiated decisions are less risky than what a court might provide, a calculus like that which occurs in settlements.

Finally, constituencies may bristle at top-down government decisions for a variety of reasons. An official reported: “I don’t think anybody can do anything on their own anymore and be legitimate.”<sup>127</sup> This point is consistent with the theory of deliberative democracy—the idea that citizens and government representatives alike should give reasons for the decisions that they reach, using some mix of procedural and substantive information to justify policies.<sup>128</sup> Collaboration on sensitive decisions appears to have become the new norm.

#### 6. *Overcoming group polarization*

The possibility-opening nature of collaborative analysis may overcome some of the very biases that behavioral economists use to justify top-down policy solutions.<sup>129</sup> Behavioral economists observe that group polarization is a virtually inevitable function of belonging to a group.<sup>130</sup> Creating a new stakeholder group may

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125. Interview 4 (on file with author).

126. *Id.*

127. *Id.*

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

129. *See infra* Section II.B.

130. Kahan et al., *supra* note 104, at 1085; Cass R. Sunstein, *The Law of Group Polarization*, 10 J. POL. PHIL. 175 (2002).

avoid this outcome by providing an opportunity for people with entrenched viewpoints to form a new identity as a member of a collaborative group committed to compromise. Social scientists have predicted this result, noting:

[C]ultural affinity is the dominant in-group when individuals appraise risk. But as they engage one another in earnest face-to-face deliberation, individuals committed to resolving an important common problem typically form strong emotional bonds. It's plausible to imagine that these connections generate a group identity that, for the period of deliberation at least, displaces cultural affiliations as individuals' dominant reference point.<sup>131</sup>

Precisely such a dynamic appears to have occurred within the successful collaborations that I studied.<sup>132</sup> Relationships defined by deep-seated distrust transformed through ongoing participation in the group. Although previous opponents are not aligned, strong relationships have emerged, which serve to humanize opposing perspectives. Moreover, the creation of a shared group seemingly lessened the need for participants to cling to their positions. It became socially acceptable to compromise and see differing perspectives.

Of course, the mere creation of relationships in well-functioning groups does not indicate that all groups will be successful. Agency officials provided examples of decades-long collaborations marked by entrenched positions and in-fighting with few tangible successes.<sup>133</sup> The key trademarks of unsuccessful groups included: personality conflicts, distrust, and an unwillingness to compromise.

Trust is the well-acknowledged linchpin of successful groups.<sup>134</sup> But how does it emerge? Three factors repeatedly came up in interviews with agency officials that seem particularly likely

131. Kahan et al., *supra* note 104, at 1101–02.

132. See Bradshaw, *supra* note 70; *infra* Part I.

133. Although the agency officials declined to permit the details of these failures to be published, it is important to note that failures exist, if only to flag the need for further study of what breeds, or prevents, group polarization.

134. For a discussion on the role of trust in collaborative regulatory decision-making, see AYRES & BRAITHWAITE, *supra* note 109, at 84–86; Keith G. Provan & Patrick Kenis, *Modes of Network Governance: Structure, Management, and Effectiveness*, 18 J. PUB. ADMIN. RES. & THEORY 229, 237–38 (2007).

to indicate success. *First*, several groups attribute their success to professional facilitation by a skilled expert in group dynamics.<sup>135</sup> Similarly, some agencies have dedicated experts in stakeholder collaborations available to agency staff engaging in collaborative analysis.<sup>136</sup>

*Second*, some groups have preexisting shared social norms among group members or agency members, based upon kinship relationships, geographic proximity, or prior cooperative endeavors.<sup>137</sup> Note that lower-level state (not federal) officials formed the WACHWG. The social relationships between these rural state government officials and the key stakeholders led to a more inclusive and collaborative approach than approaches created by top state and federal officials. Shared norms may provide preexisting understandings of acceptable behavior and dispute resolution, as well as deepen the parties' investment in the success of the group, with anticipated spillover effects into other aspects of their relationships.<sup>138</sup>

*Third*, I suspect that relational contracting is playing an unsung role in trust-building. Creating early-stage internal rules, group charters, and memoranda of understanding with the agencies may satisfy the scaffolding functions that are known to build trust among commercial contracting parties.<sup>139</sup>

For example, the WACHWG organizers focused on addressing small issues at first to build trust, rather than risk fracturing the budding group by taking on sensitive issues initially. For the first five years, the WACHWG avoided addressing herd management issues altogether to avoid "rocking the boat."<sup>140</sup> Instead, the focus was on facilitating an environment in which the group could build

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135. Bradshaw, *supra* note 8, at 51–52.

136. *Id.* at 25.

137. Schulz & Lueck, *supra* note 78, at 2542 (describing how the Malpai Borderlands cattle ranching community successfully leverages preexisting relationships to manage wildfire risk). Several founding members of the Western Arctic Caribou Herd Working Group had familial relationships with members of Alaskan Native communities, which facilitated trust that would likely have been otherwise unavailable to agency officials.

138. This is my generalized observation resulting from dozens of interviews in various settings and cultural contexts; it is not a sentiment stated by a particular interview subject.

139. Karen Bradshaw, *Agency Coordination of Private Action: The Role of Relational Contracting*, 6 TEX. A&M L. REV. 229, 229 (2018) (symposium article discussing the role of relational contracting in public-private collaborations).

140. Dau interview, *supra* note 28.

trust and find a “grudging” consensus over time. The caribou herd was large and growing during this period, so there was no real controversial management issue requiring WACHWG’s attention.

Although anecdotal, the factors of external involvement, shared norms, and relational contracting appear to be some factors that may increase chances of trust—and thus success—among group members.

### 7. *Enabling resource pooling*

Stakeholders in collaborations use their relative strengths to advance shared objectives. Agencies and stakeholders are both confined in what they can do. By pooling capacities, the group can jointly achieve more than any individual stakeholder could achieve alone. Collaborative analysis allows for public-private pooling analogous to agencies pooling with other agencies within the executive branch.<sup>141</sup> For example, stakeholders cannot directly manage public lands, and agencies cannot lobby Congress. Yet, working collectively, stakeholders and agencies can develop common goals, then deploy their relative strengths to advance the objectives.<sup>142</sup> For stakeholders in collaborations, these strengths often include financial resources, human resources, and the capacity to lobby.

This synergistic relationship displaces the traditional notion of agency and non-agency actors acting under the principal-agent model, in which agencies are essentially controlling external parties.<sup>143</sup> Instead, agencies both support—and are supported by—stakeholders; agencies influence stakeholder groups and stakeholder groups influence agencies. Ultimately, agency and non-agency actors with different capacities and constraints use collaborations as a starting point to pool resources to advance shared objectives. The extent of this pooling may, however, raise questions about the distinctions between public and private

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141. See Daphna Renan, *Pooling Powers*, 115 COLUM. L. REV. 211, 211 (2015) (describing agency to agency pooling).

142. Bradshaw, *supra* note 139.

143. Hannah Wiseman has observed elsewhere in the administrative state that the relationships now seem bi-directional. Hannah J. Wiseman, *Delegation and Dysfunction*, 35 YALE J. ON REG. 233, 233 (2018).

entities, and the degree to which law does—and should—preserve such distinctions.<sup>144</sup>

### 8. *Creating responsive policies*

Collaborative groups operate as a self-updating system that can continuously adapt to new information and changed conditions. In 1992, Ian Ayres and John Braithwaite introduced responsive regulation, in which regulated entities and private interests cooperate with regulators to create and enforce standards.<sup>145</sup> Agencies must continuously respond to emerging social, economic, and ecological information—having an established stakeholder group to consult in response to that information is valuable. Collaborative analysis is uniquely suited to responsive policymaking. A pre-existing group with established rules and relationships is always on-call for responding to new and updated information. Group members influenced by different information flows can pool data to predict trends or future events. Moreover, the group members may themselves generate or observe new information to allow timelier policymaking.

Collaborative analysis also serves as a component of what Robin Kundis Craig and J.B. Ruhl describe as adaptive management: an iterative decision-making process, in which people learn from experience and incorporate new information to create a flexible management plan amidst changing conditions.<sup>146</sup> They note that collaborative adaptive management is present in medical device safety regulation, financial regulation, natural resource management, and social welfare systems.<sup>147</sup> These observations suggest that there may be many realms within the

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144. Although 4FRI lobbies Congress, an interviewee from another agency noted that “we are pretty careful *not* to encourage stakeholders to lobby Congress” and suggested that lobbying is “rare” and resisted the implication “that Federal agencies work with NGOs to lobby Congress on our behalf.” E-mail from Interviewee 6 to author (on file with author).

145. AYRES & BRAITHWAITE, *supra* note 109; Parker, *supra* note 9, at 2, 7 (describing Ayres and Braithwaite’s book as “canonical,” but noting that, despite their reliance on law and economic justifications for responsive regulation, the field of law and economics had not engaged deeply with their ideas).

146. Robin Kundis Craig & J.B. Ruhl, *Designing Administrative Law for Adaptive Management*, 67 VAND. L. REV. 1, 26 (2014); *see also* Kirk Emerson et al., *An Integrative Framework for Collaborative Governance*, 22 J. PUB. ADMIN. RES. & THEORY 1, 2 (2011) (describing collaborative governance, which is similar to adaptive management).

147. Craig & Ruhl, *supra* note 146, at 1.

administrative state in which collaborative analysis can contribute to policymaking.

### B. Considering Counterarguments

Along with its benefits, collaborative analysis is not without critiques. In this section, I address head-on the arguments of collaborative analysis critics, namely that a group is prone to: irrational cognitive distortions, agency capture by interest groups, lack of participation by lesser-advantaged stakeholders, and substantively worse decisions.

Evidence from the social sciences suggests that scholarly concerns about the irrationality of individuals assessing evidence may be overstated. I suspect that environmental justice concerns and agency capitulation to interest groups will occur under any decision technique. The question, then, is not whether risk management could lead to poor decisions—it surely could. The relevant question is whether it can *sometimes* lead to better decisions than reliance on isolated agency decision-making informed by analytic data; I answer this question with a resounding yes.

#### 1. Irrational cognitive distortions

Behavioral economics is widely used to justify agencies' need for cost-benefit analysis<sup>148</sup> and perhaps provides the most persuasive argument against collaborative analysis. Richard Thaler and Cass Sunstein draw upon behavioral economics to suggest that average people do poorly when making rational decisions about complex risks.<sup>149</sup> Framed in terms of the earlier assessment of risk management,<sup>150</sup> their position might suggest that the human brain evolved to gauge the risk of a lion attack, but cannot fathom the

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148. See generally RICHARD H. THALER & CASS R. SUNSTEIN, *NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH AND HAPPINESS* (2008).

149. *Id.* at 137 (“People often make poor choices.”); Sunstein, *supra* note 18, at 354 (“Human beings have a great deal of difficulty in assessing risks, making them prone to both hysteria and neglect . . .”); Richard H. Pildes & Cass R. Sunstein, *Reinventing the Regulatory State*, 62 U. CHI. L. REV. 1, 62 (1995) (“Where differences stem from cognitive errors, such as the availability heuristic, policymakers can properly exert leadership and not defer to lay assessments.”). Dan Kahan questioned the theoretical underpinnings, noting that empirical findings on risk perception in the social sciences contradict the anti-populist aspects of Sunstein’s account. Kahan et al., *supra* note 104, at 1104.

150. See *supra* Part I.

likely effects of an invisible, global problem. Sunstein advocates for agencies to use cost-benefit analysis to analyze and set policy.<sup>151</sup> Courts should support this, Sunstein argues, by deferring to “the purely factual judgments of scientific experts” (i.e., agencies) to avoid hysterical responses by the broader public.<sup>152</sup>

One can imagine the argument that groups, like individuals, are subject to a variety of biases that can produce bad decisions. Indeed, groups may be even worse – members might reinforce each other’s irrational choices.<sup>153</sup> If we accept this as true, then the question emerges: why are agencies, essentially a group of policymakers, not themselves subject to such biases? Of course, they are. But, the argument goes, agencies are subject to oversight, whereas private groups are not, and officials may reduce the potential for errors through awareness of them.<sup>154</sup> Advocates for agency-determined policies focus on the good outcomes that top-down, data-driven regulations have achieved.<sup>155</sup>

My response begins with questioning the claim that private groups are inherently suspect, and agencies are somehow a panacea against lousy decision-making. Critics of cost-benefit analysis note that there are several instances when agencies made the wrong call concerning risk or would have if using data-driven

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151. Others have argued against widespread adoption of cost-benefit analysis on practical and moral grounds. Frank Ackerman and Lisa Heinzerling mount the primary critique of the cost-benefit approach. In a multi-pronged attack, they argue that the tool is at once amoral and leads to poor decisions. They argue instead for adoption of the Precautionary Principle of avoiding potentially harmful approaches. See generally FRANK ACKERMAN & LISA HEINZERLING, PRICELESS: ON KNOWING THE PRICE OF EVERYTHING AND THE VALUE OF NOTHING (2004).

152. Timur Kuran & Cass R. Sunstein, *Availability Cascades and Risk Regulation*, 51 STAN. L. REV. 683, 737, 739 (1999) (“[A] properly functioning government committed to people’s well-being will not respond mechanically to expressions of anxiety.”); see also Pildes & Sunstein, *supra* note 149, at 52 (noting that “CBA and comparative risk assessment . . . often appear to be the most promising means” of making sure that “social resources are devoted to the most serious problems”). When public opinion pushes agencies towards decisions not indicated by cost-benefit analysis, Sunstein suggests that agencies should “bow to some degree of such concerns while nevertheless overriding them when possible.” SUNSTEIN, *supra* note 111.

153. For a discussion of group polarization, see Sunstein, *supra* note 130; cf. Kahan et al., *supra* note 104, at 1103.

154. CASS R. SUNSTEIN, LAWS OF FEAR: BEYOND THE PRECAUTIONARY PRINCIPLE 65–127 (2005) (noting that agency experts are better-positioned to avoid the errors that distort the risk assessments of the broader citizenry).

155. See, e.g., ADLER & POSNER, *supra* note 74, at 129–32 (listing decision-making biases).

analysis.<sup>156</sup> Agency decisions leading to population collapse of a caribou herd, causing Alaskan Natives to die of starvation, provide a compelling reminder that agency officials can make good and bad decisions when employing any decision tool. Such reliance on anecdote questions the soundness of the premise. Having flagged this point, I set it aside and turn to the broader point.

The argument that the agency action in isolation is the best choice presumes a reality that does not exist, namely that agencies can make decisions isolated from public reaction. Disaggregating agency policymaking into staggered steps of assessment, management, and implementation creates a distortion whereby scholars pretend that agencies can make decisions in a vacuum and can put forward pure data-based assessments immune from public or industry response. Yet, agencies must deal with the public at some point. The question, then, is really when and how the agency chooses to engage with the public. There are essentially three options:

*First*, the agency can decide in isolation and try to sneak or shove its decision through without public approval. This approach rolls the dice on potential litigation. If the decision is not detected, perhaps it will not be disputed. But, if agencies make important decisions with inadequate public input, the backlash can prove intense.

*Second*, the agency can make a management decision based on risk assessment data, then try to garner public support or withstand public controversy before codifying its decision. This is the model implicitly envisioned by the analytic-data approach. This approach can incur substantial implementation delays if stakeholders object to either the assessment or the management decision. Stakeholders can litigate or force an agency to go back to the drawing board to incorporate unaddressed concerns.

*Third*, under the collaborative approach, an agency identifies a problem, then works with stakeholders to determine what data is needed, gathers the data, and asks the collaboration for recommendations that account for the social, economic, and ecological criteria. Public concerns are embedded in the decision-making process early, and, as a result, agencies can focus some

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156. Ackerman et al., *supra* note 96, at 156.

degree of data towards addressing the concerns at the assessment stage. Agencies still, clearly and definitively, exercise final decision-making authority over the policy – they cannot give that away.

Cass Sunstein acknowledges that agencies sometimes cannot reach the policy outcome that the data would argue is the “right” one because public input derails the agency from selecting the appropriate result. Given that this critique could apply to all three decision-making approaches, the question is not whether to engage the public, but rather how and when. Under any scenario, then, agencies must interface with the very public that behavioral economists distrust. They can do so under an adversarial, defensive posture under the first alternative; from a somewhat more open but still top-down approach in the second example; or from the basis that they are in a shared decision space that depends upon early incorporation of, although not necessarily acquiescence to, public opinion.

## 2. Capture

One critique of collaboration is that it is, in fact, legally sanctioned agency capture. Agency capture occurs when agencies look primarily to one interest group to provide inputs into the regulatory process to the exclusion of other interest groups.<sup>157</sup> For collaborative analysis, the specific concern is that an agency would make a second-best policy decision to maintain good relationships with the stakeholder collaboration.<sup>158</sup> Even if this is true, it is not necessarily undesirable. Ian Ayres and John Braithwaite provide a game-theoretic model of capture showing that some degree of agency capture, particularly in response to group decision-making, can be beneficial.<sup>159</sup> Moreover, an agency can change course without additional procedures if it discovers that it made the wrong choice.

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157. Nicholas Bagley & Richard L. Revesz, *Centralized Oversight of the Regulatory State*, 106 COLUM. L. REV. 1260, 1285 (2006).

158. In one incident, a scientist approached an agency official to complain that a decision was clearly against scientific evidence that supported an alternate approach. “I know,” the agency official conceded, “but I have to keep the ranchers happy.” Interview on file with author.

159. AYRES & BRAITHWAITE, *supra* note 109, at 55–81.

The more troubling capture concern is that an agency might favor a particular interest group, rather than the stakeholder group collectively. Some environmental groups suggest that stakeholder participation is a way for agencies to maintain the appearance of a neutral process while giving industrial interests what they want.

To some extent, Congress has addressed this concern by passing the Federal Advisory Committee Act (FACA). As explained in the companion to this Article, FACA

outlines how federal agencies may partner with citizens and private entities. FACA applies when agencies coordinate with an organized, cohesive group of non-agency actors—long-term consultants, nongovernmental organizations, companies, or industry groups—for input on agency policies and decisions. It does not apply to government-to-government coordination, as when a federal agency works with tribal, state, or local governments. The applicability of FACA is governed by a few court decisions, which collectively suggest that if the agency convenes or controls an ongoing group with a limited membership that produces consensus and recommendations, then it must seek FACA certification. At the time of this writing, over 1,000 FACA certified collaborations exist.

Congress enacted FACA before alternative dispute resolution and collaborative government became widely popular, according to some agencies. As a result, some officials view the statute as out-of-step with modern imperatives to collaborate. FACA certification can take years to complete, a fact that can serve as a major impediment to the formation of a new group. Indeed, agencies actively counsel employees on how to construct stakeholder groups that do not trigger the need for FACA certification. The danger of avoiding FACA certification is that agency decisions made in consultation with non-certified stakeholder collaborations may run afoul of the non-delegation doctrine, which limits agencies' ability to share decision-making authority provided by Congress.<sup>160</sup>

A variety of doctrines, statutes, and case holdings require agencies to retain final decision-making authority over management decisions, even when working with collaborations.<sup>161</sup>

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160. Bradshaw, *supra* note 69, at 456–58 (internal citations omitted).

161. *Id.* at 444.

Yet, agencies must share decision-making space to some degree to motivate stakeholders to participate in a collaboration. For example, leaders in two Alaskan Native communities refused to participate in the WACHWG collaboration when it became clear that the Alaska Department of Fish and Game would not share its decision-making authority. If stakeholders do not believe that an agency will implement the collaboration's recommendation, they have minimal incentive to continue collaborating.

In requiring agencies to both engage with stakeholders and retain sole final decision-making authority, Congress has created a problematic situation. Readers should not misunderstand this observation as a call for Congress to relax agencies' decision-making authority over public land and resources. The non-delegation doctrine and related laws exist for numerous reasons, including to ensure that agencies manage resources in the public trust—for the collective benefit of all citizens.<sup>162</sup> And stakeholder collaborations tend to be local. Agency accountability to both the local stakeholder collaborations and the political influence of the executive branch therefore provides a check on localized power over resources. This point underscores, however, the challenges agencies face in retaining sole decision-making authority while motivating stakeholders.

To navigate this balance, agencies seem to be paying lip service to retaining sole decision-making authority while actually sharing some portion of decision space. The 4FRI collaboration case study that I presented in another recent article illustrates this point: the defining narrative of the group centers on the objection process for the first Environmental Impact Statement (EIS) in which the collaboration participated.<sup>163</sup> The Forest Service Regional Forester handled the objection process by referencing the group decision-making process when evaluating the objections of a non-group-member, WildEarth Guardians. This suggests a special status for collaborations not available to the public. The 4FRI stakeholders felt validated when the agencies' official decision-making essentially rubberstamped the collaboration's recommendation. The agency's support of the collaboration's consideration—even in a space in

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162. DAVID SCHOENBROD, *POWER WITHOUT RESPONSIBILITY: HOW CONGRESS ABUSES THE PEOPLE THROUGH DELEGATION* 1–21 (1993).

163. Bradshaw, *supra* note 69, at 472.

which the agency ostensibly had sole authority – illustrates the fine line agency officials must walk.

Stakeholders participate in collaborations because they have a significant financial or cultural interest in the land and resources at stake.<sup>164</sup> Stakeholders are highly motivated to participate when they believe that they can protect and advance their interests through participating in a collaboration. The less likely the agency is to follow the recommendation of the collaboration, the less motivated stakeholders will become to collaborate. If the stakeholders are sufficiently reflective of the interests at play, capture concerns in this process will neutralize as the collaboration must reach mutually acceptable outcomes among opposed parties.

Judicial review is another factor mitigating the capture concern. Courts are expert in evaluating procedural fairness. And they have repeatedly shown a willingness to evaluate the procedural fairness of public participation rather than accepting the mere existence of some collaboration as *per se* evidence of inclusion. In *Western Watersheds Project v. Kraayenbrink*,<sup>165</sup> a federal district court reviewed the Bureau of Land Management's revisions to regulations regarding public input on cattle grazing on public land. Rules promulgated in 1995 "gave extensive consideration to public participation in rangeland management."<sup>166</sup> In response, industry group National Cattlemen's Beef Association proposed revisions, including limits to public participation in day-to-day grazing matters.

The Bureau of Land Management (BLM) adopted these suggestions and published proposed rules changing the public participation process in two ways. *First*, it redefined the "interested public" that would receive notifications of BLM decisions, noting that the agency planned to drop from the notification list any group that did not comment on every decision.<sup>167</sup> This created a burdensome requirement that stakeholders provide hundreds of comments a year on matters of varying importance to receive

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164. This accords with general economic understanding that people with diffuse interests will not invest in protecting their interests. See generally MANCUR OLSON JR, *THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS* (1965).

165. *W. Watersheds Project v. Kraayenbrink*, 538 F. Supp. 2d 1302 (D. Idaho 2008).

166. *Id.* at 1306.

167. *Id.* at 1309.

information. *Second*, the new rule limited BLM's duty to "consult, cooperate, and coordinate (CCC) with the interested public" on permitting decisions.<sup>168</sup> It exempted several categories of decision-making from the CCC requirements.

The BLM justified these limitations to public participation citing that it incurred "substantial expenses" mailing notices to the public.<sup>169</sup> It also noted that "in-depth public involvement can delay routine management responses . . . . Cooperation with permittees and lessees [cattle ranchers], on the other hand, usually results in more expeditious steps to address resource conditions and can help avoid lengthy administrative appeals."<sup>170</sup> An interdisciplinary team of experts reviewed these planned changes and found that limiting public input would likely worsen land management decisions and cause environmental harm. The report concluded that broadened public participation was desirable. Despite this, BLM published a notice in the Federal Register to adopt the new rules. An estimated 5000 public comments opposed the new rules during the notice-and-comment period. The BLM finalized the rules, despite these objections. A nongovernmental organization sued, arguing that the decision violated multiple federal statutes.<sup>171</sup>

The federal district court found that limiting public participation and CCC duties limited the ability of the public to assess policy decisions.<sup>172</sup> It noted that "the changes substantially affect both the amount and quality of public input" and would "freeze the public out" from some decisions.<sup>173</sup> The court held that the revisions facially violated mandatory provisions in the Federal Land Policy Management Act requiring public input.<sup>174</sup> In dicta, the court also suggested that such limitations on public input violated NEPA requirements for public participation.<sup>175</sup> Notably, this case emerged from Idaho, a Western state with strong cattle ranching interests. It indicates a high degree of judicial willingness to

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168. *Id.* at 1309-10.

169. *Id.* at 1312-13.

170. *Id.* at 1313.

171. *Id.* at 1311-12.

172. *Id.* at 1314-15.

173. *Id.* at 1314.

174. *Id.* at 1316.

175. *Id.* at 1315.

scrutinize agency action to respond to one set of stakeholders while excluding another.

Even assuming that we accept concerns of capture, I remain unconvinced that this differentiates collaborative analysis from other forms of agency decision-making. As early as 1965, economist Myrick Freeman noted that “such noneconomic factors as the pork-barrel, logrolling, and empire building play an important role” in outcomes reached by cost-benefit analysis.<sup>176</sup> More recently, Professor Sidney Shapiro has offered a scathing account of how presidential administrations can politicize risk assessment.<sup>177</sup> Shapiro notes that many choices are discretionary, and discretionary choices at the assessment phase can lead to different management decisions.<sup>178</sup> In one example, industry undertakes the risk assessment independently. It then provides the results to the agency, despite concerns that the industrial actors have strong incentives to craft research that advances their interests.<sup>179</sup>

The case *Northern Spotted Owl v. Hodel*<sup>180</sup> serves as a reminder of how an agency can go to great lengths to gather high-quality data, then ignore it for political reasons. In *Hodel*, the U.S. Fish and Wildlife Service decided not to list the Northern Spotted Owl as a threatened species, despite a consensus among biologists that doing so was scientifically indicated.<sup>181</sup> A federal district court held that the agency’s decision was arbitrary and capricious and remanded the decision to the agency. The issue became so politicized that President Clinton held a listening session with stakeholders in the Pacific Northwest on the issue during his first month in office. This example of the Spotted Owl suggests that when public stakes are high enough, the decision will be shifted out of agency hands and escalated to the President.<sup>182</sup>

The central concern about collaborative analysis should be exclusion rather than capture. For the reasons outlined above,

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176. A. Myrick Freeman, III, *Six Federal Reclamation Projects and the Distribution of Income*, 3 WATER RESOURCES RES. 319, 331 (1967) (studying six cost-benefit analyses for Bureau of Reclamation process and finding the results reflective of political influence); cf. SUNSTEIN, *supra* note 154155, at 162 (stating that cost-benefit analysis avoids agency capture).

177. Shapiro, *supra* note 19.

178. *Id.* at 1089-90.

179. *Id.* at 1097-98.

180. *N. Spotted Owl v. Hodel*, 716 F. Supp. 479 (W.D. Wash. 1988).

181. *Id.*

182. Kagan, *supra* note 3, at 2297-98.

judicial intervention will do much to avoid agencies using collaborations to benefit one group unfairly. Strong interest groups excluded from decision-making can use litigation or lobbying to advocate for their view. But this relies upon access to resources; some stakeholders are better positioned to participate in collaborations because they have the time and money to attend. This is true even when other, less well-off stakeholders have a keen interest in the outcome of a decision.

### 3. *Inclusiveness*

Which stakeholders get a seat at the table? Inclusiveness is a central concern of collaborative analysis. If agencies are incorporating the input of stakeholders representing diverse interests without leaving anyone out, there are many reasons to feel optimistic about the process. But if some genuinely interested voices do not find their way into the collaborative analysis, that is problematic.

Although an agency might sometimes explicitly and knowingly invite some stakeholder perspectives while limiting others, such overt action is clear to a court and the public.<sup>183</sup> The more insidious issue of exclusion occurs when an agency offers many stakeholders the opportunity to participate in an ostensibly neutral way, but external circumstances preclude involvement from stakeholders with a deep interest. Such a lack of participation is unlikely to rise to the level of judicial notice, as the stakeholders who might raise the issues lack the resources to do so.

Environmental justice theory describes some stakeholders as repeatedly disadvantaged because of their race, lower socio-economic-status, less education, age, gender, or rural living conditions, which make them less able to influence government decisions.<sup>184</sup> President Clinton issued an executive order requiring agencies to analyze the effect of their decisions on historically disadvantaged groups.<sup>185</sup> But these legal and moral requirements

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183. *But see* *W. Watersheds Project v. Kraayenbrink*, 538 F. Supp. 2d 1302 (D. Idaho 2008) (partially overturned on other grounds).

184. KRISTIN SHRADER-FRECHETTE, ENVIRONMENTAL JUSTICE: CREATING EQUALITY, RECLAIMING DEMOCRACY 6–8 (2002).

185. Exec. Order No. 12,898, 3 C.F.R. 859 (1995), *reprinted as amended in* 42 U.S.C. § 4321 note (2018).

alone cannot overcome practical realities. For collaborative analysis, environmental justice concerns suggest that commentators should focus on including stakeholders who lack the resources necessary to participate but have an interest in the resources at stake.

Consider the example of the environmental justice issues incumbent in the WACHWG case study. Earlier, the case study reported that several tribal representatives from Alaskan communities have flown to Anchorage several times a year, for decades, to participate in the collaborations. In this Section, I situate the representatives' ongoing involvement against the social, geographic, and economic hardship in their lives. The point that emerges is that the people most imperiled by failed risk management may face the highest marginal cost of participating in a collaboration to manage that policy. I sketch the details of this dilemma below.

Contrast the difficulties borne by the representatives of the Alaskan Native communities to those of other stakeholders in the Western Arctic Caribou Herd. Agency officials, representatives of extractive industries, state and local government officials, and employees of environmental nongovernmental organizations are all receiving their wages for attending meetings—it is part of their jobs. This allows these stakeholders to engage in careful, data-intensive decision-making. But it can serve as a functional bar against the perspectives of stakeholders whose time and expenses are not well funded.<sup>186</sup>

Stakeholders with lower incomes but strong interests in the land and resources at issue may be displaced by stakeholder collaborations, relative to less-intensive public participation processes, such as notice-and-comment periods.<sup>187</sup> Collaboration disadvantages interested stakeholders with insufficient resources to express that interest through attending meetings, relative to

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186. ORR, *supra* note 73.

187. For example, the annual Western Arctic Caribou Herd Working Group (WACHWG) meetings take place over two to three days in a location that is several flights away from villages in which caribou are a primary food source. The 4FRI meetings take place midmorning on weekdays. Hourly workers or stay-at-home parents might find either meeting difficult to attend, which contributes to the likelihood that only well-funded stakeholder collaborations, such as industrial interests and nongovernmental organizations, will be able to afford to send representatives.

attending a one-time listening session, or participating in public comment periods.

One response to this concern may be that sufficiently motivated stakeholders will pool resources to fund representation in collaborations. This may be true for certain interests, as with sportsmen groups who have organized to quite effectively represent hunting and fishing interests. It is also true for representatives from Alaskan Native communities, whose deep reliance on caribou have driven long-term involvement in the collaboration in which communities pool resources to send representatives. But this optimistic account fails to take into account the social and economic costs borne by rural populations who cannot afford to participate but also cannot afford not to.

Although this discussion focuses on Alaskan Native communities, the issue of involving all stakeholders in collaborations is a national issue.<sup>188</sup>

Having detailed these concerns, I now situate them relative to other alternatives. Despite the practical difficulty, a core tenet of collaborative analysis is giving voice to groups who are unable to participate in cost-benefit analysis and litigation. At least with collaborative analysis, it is clear who the group is including—something that other approaches may obscure.

Highlighting the problem also shines attention on the need for more and better solutions. The current state of inclusiveness in collaborative analysis can and should be improved over time. Doing so can achieve some of the aims of restorative

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188. It is striking that 4FRI, the most lauded stakeholder collaboration in the Forest Service, does not have tribal representatives who belong to the collaboration. A stakeholder notes: "I would say we classically miss, and this is across the West, our tribal partners. We have been less than successful at engaging our tribal nations, and there are a lot of reasons for that." BRADSHAW, *supra* note 8, at 39. Several factors can give rise to tribes not being represented, although these considerations differ on a tribe-by-tribe basis given the broad diversity of tribal resources and objectives. Further, tribes have a special status, and may elect to become involved in resource management from a government-to-government relationship instead, under the Section 7 Consultation requirement of NEPA. 42 U.S.C. §§ 4321 to 4370m-12 (2012). Tribes electing to rely solely on this option should not, and legally cannot, have their perspective dismissed because they did not participate in the collaboration. Given the specialized legal status of tribes under NEPA, agencies cannot legally overlook the obligation to consult with tribes.

justice.<sup>189</sup> Consciously integrating the principles of restorative justice—such as flexibility and responsiveness—into stakeholder collaboration may serve to improve participation among lesser-advantaged groups.

As a concluding thought on this point, I return to the initial point that inclusion remains the central and most pressing critique of collaborative analysis. I have some suggestions for how to improve, but not solve, these concerns. But I do not claim to solve them—instead to suggest that under present circumstances that this solution likely operates better—on a relative basis—than other risk management tools at balancing opportunities for meaningful input with stakeholders with widely divergent access to resources.

#### 4. *Decision quality*

How do collaborations perform relative to alternative approaches? Claims about the successes of collaborations are not relative; there is a limited empirical basis for the claim that they work better than alternative methods. Interestingly, the same collaboration can generate sharply different assessments of success, as illustrated by the enthusiasm with which agency officials speak of 4FRI contrasted with the scathing newspaper editorial on the subject.<sup>190</sup> This divergence highlights the absence of defined metrics by which to judge a collaboration, either in isolation or relative to other means of engagement.

When asked about successful and unsuccessful collaborations, the answers of agency officials were anecdotal and involved stories of collaborations that produced either positive or negative outcomes. While several interviewees shared stories comparing successful and unsuccessful collaborations, some retracted these statements out of fear that critique would undermine the unsuccessful collaborations that are still in operation. For that reason, I cannot provide specific instances of

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189. John Braithwaite, *Relational Republican Regulation*, 7 REG. & GOVERNANCE 124, 125 (2013); Jennifer J. Llewellyn, *Restorative Justice: Thinking Relationally About Justice*, in BEING RELATIONAL: REFLECTIONS ON RELATIONAL THEORY AND HEALTH LAW 89, 89–93 (Jocelyn Downie & Jennifer J. Llewellyn eds., 2012).

190. Compare Bradshaw, *supra* note 69, at 476–77, with Editorial, *Our View: The Forest Service Shouldn't Pat Itself on the Back Yet*, ARIZ. REPUBLIC (Apr. 22, 2015, 5:49 PM), <http://www.azcentral.com/story/opinion/editorial/2015/04/22/fri-deal-struck-last-get-thinning/26212565/>.

unsuccessful collaborations but flag the vital point that some collaborations fail.<sup>191</sup>

In terms of evaluating the success and failures of collaborations, it is important to note that non-empirical feedback can be useful. Jonathan Masur and Eric Posner have justified monetizing benefits and harms by analogizing quantification to corporations' use of net present value to evaluate various projects.<sup>192</sup> They suggest that calls against quantification are "bizarre," noting that CEOs regularly engage in similar methods of assessing projects developed by various department heads.<sup>193</sup> This point provides an accurate, but incomplete, account of corporate decision-making. CEOs regularly engage with division heads and other team members—including suppliers and customers—to evaluate how various projects and divisions are performing. Just as a CEO would be derelict in not requiring financial analysis of proposed projects, so too would she fall short if she neglected ongoing project management. Thus, to the extent that we look to real-world corporate practice to justify quantification, so too can we find support there for how to evaluate collaborative analysis.

A pernicious effect of collaboration is that it gives the *appearance* of a democratic process, which makes the agencies' decisions more defensible in court. "In one example, members of the local environmental community refused to participate in a collaboration because they felt that previous collaborations amounted to a series of elaborate hand-waving by the agency to give the appearance of appropriate democratic process while giving ranchers the grazing access they wanted."<sup>194</sup> In another example, a member of an independent scientific review board examining agency action was

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191. These withdrawals should cause future researchers to be thoughtful about the incentives for self-assessment by agency officials and stakeholders in evaluating the success of ongoing collaborations. Officials' unwillingness to engage with negative assessments of collaborations also raises broader questions—outside of the context of this Article—about the degree to which norms against talking about the challenging aspects of collaboration hampers the potential for healthy collaborations, limits the ability to meaningfully assess the relative merit of collaboration, and may be reflective of entrenched agency culture or location-specific norms. Importantly, the individual interviewees are operating in the political and social realities of the situation; they do not personally bear responsibility for the larger issues, they merely reflect them.

192. Jonathan S. Masur & Eric A. Posner, *Cost-Benefit Analysis and the Judicial Role*, 85 U. CHI. L. REV. 935, 940 (2018).

193. *Id.* at 941.

194. Bradshaw, *supra* note 69, at 485.

surprised to learn that the local agency position was mainly acquiescence to local ranching interests. When the member of the review board protested that this was inconsistent with the requirements of the Endangered Species Act and other federal laws, the agency official acknowledged this as accurate but nevertheless refused to budge.

Regardless of external measures of collaboration successes, there remains a powerful but inchoate sense among agency officials that collaborations work to advance agency goals.<sup>195</sup> This sense of collaboration, as reflective of democratic principles, is also discernible in the language of the congressional acts and executive orders requiring collaboration.

### *C. Cost-Benefit Analysis Fails and Collaborative Analysis Works*

Cost-benefit analysis works quite well in some contexts. Volumes of books and academic articles make this point; I do not attempt to replicate them here. Sometimes, however, cost-benefit analysis is poorly matched to the question at hand. Under such conditions, policymakers can select collaborative analysis from the buffet of available choices. It works in situations in which cost-benefit analysis fails: in weighting distributions and in assessing the social acceptability of outcomes.

First, U.S. agencies using cost-benefit analysis do not engage different considerations for distribution—or moral—outcomes. This is antithetical to how the creators of cost-benefit analysis thought that government would use the tool; it can lead to perverse results. Proponents acknowledge the limitations of quantitative analysis in assessing risk but suggest that it is the best available tool.<sup>196</sup>

Although generally conceived of as a data-driven tool, cost-benefit analysis also reflects normative judgments. Through the process of the distributional weighting of various inputs, value

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195. A government biologist reflected this sentiment, saying, “Just as a person, I think it is valuable to collaborate with people who are invested in decisions that you make. So I think [stakeholder collaborations] are pretty important.” Interview 10 (on file with author).

196. For a discussion of scholarly responses to the analysis of limitations of cost-benefit analysis, see generally ACKERMAN & HEINZERLING, *supra* note 151.

judgments shape economic outputs.<sup>197</sup> Even ostensibly neutral choices in cost-benefit analysis reflect distributional outcomes—there is no escaping the normative component of policymaking. Despite this, scholars have differed on how agencies should assign distributional weights for over sixty years. Indeed, the issue of distributional weighting forms a central debate within law and economics scholarship on cost-benefit analysis today.<sup>198</sup>

Economists have long acknowledged that the person creating a cost-benefit analysis must incorporate subjective judgments,<sup>199</sup> judgments which economists were ill-suited to make.<sup>200</sup> In 1961, Otto Eckstein noted, “[I]n no event should the technician arrogate the weighting of objectives to himself by presenting a one-dimensional answer after burying the weighting process in . . . technical details.”<sup>201</sup> In the 1950s, mainstream neoclassical economists and agricultural economists argued for consumer sovereignty—that market prices and shadow prices should weight the analysis.<sup>202</sup> Others argued that markets failed to capture these values because the relevant metric was a political community, not the mere aggregation of the preferences of individual citizens.<sup>203</sup> For example, Arthur Maass suggested that Congress should review

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197. H. Spencer Banzhaf, *Objective or Multi-Objective? Two Historically Competing Visions for Benefit-Cost Analysis*, 85 LAND ECON. 3, 3-4, 6 (2009) (describing Maas’ vision for cost-benefit analysis taking into account distributional effects of decisions, which ultimately did not come into fruition).

198. Weisbach, *supra* note 97 (overviewing scholarship arguing for and against distributional weighting).

199. Economic history reflects that the pioneers of cost-benefit analysis were deeply concerned with the subjective nature of weighing factors. Banzhaf, *supra* note 197, at 6.

200. Matthew D. Adler, *Benefit-Cost Analysis and Distributional Weights: An Overview*, 10 REV. ENVTL. ECON. & POL’Y 264, 264 (2016) (summarizing the literature from the debate among economists on distributional weighting in the 1950s); Otto Eckstein, *A Survey of the Theory of Public Expenditure Criteria*, in PUBLIC FINANCES: NEEDS, SOURCES, AND UTILIZATION 439, 449 (1961).

201. *Id.*

202. See, e.g., DANIEL HOROWITZ, *THE ANXIETIES OF AFFLUENCE: CRITIQUES OF AMERICAN CONSUMER CULTURE, 1939-1979*, at 129-30 (2004); JAN L. LOGEMANN, *TRAMS OR TAILFINS?: PUBLIC AND PRIVATE PROSPERITY IN POSTWAR WEST GERMANY AND THE UNITED STATES* 40 (2012); cf. JOY PARR, *DOMESTIC GOODS: THE MATERIAL, THE MORAL, AND THE ECONOMIC IN THE POSTWAR YEARS*, 84-100 (1999) (discussing Canada’s experience with consumer sovereignty in the agricultural market).

203. For a similar argument advanced by an environmental philosopher, see MARK SAGOFF, *THE ECONOMY OF THE EARTH: PHILOSOPHY, LAW, AND THE ENVIRONMENT* 31 (2d ed. 2008).

programs justified by cost-benefit analysis, suggesting that only elected representatives should make social choices.<sup>204</sup>

Questions surrounding assigning distributional weights presumably should have shifted from theory to practice when Ronald Reagan issued Executive Order 12291, requiring agencies only to promulgate regulations for which the benefits exceeded the costs.<sup>205</sup> Surprisingly, despite the rapid rise of the “cost-benefit state,” the question of distributional weighting has remained largely theoretical. Agencies virtually never use such distributional weighting in practice.<sup>206</sup>

Scholars have recently revived the longstanding debate about incorporating distributional weighting into cost-benefit analysis.<sup>207</sup> Matthew Adler has argued for weighting and proposed using the social welfare function.<sup>208</sup> David Weisbach, in contrast, argues that agencies are ill-suited to address distributional questions as a matter of institutional competency, and suggests the tax system is a superior mechanism for addressing inequality.<sup>209</sup> Current proposals center around using the social welfare function, contingent valuation,<sup>210</sup> or surveys of people’s happiness.<sup>211</sup> Even ardent proponents of cost-benefit analysis acknowledge the limitations of such quantitative measures to capture human values such as wonder and awe.<sup>212</sup> Some question whether

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204. Arthur Maass, *Benefit-Cost Analysis: Its Relevance to Public Investment Decisions*, 80 Q. J. ECON. 208, 216–17 (1966)

205. Although cost-benefit emerged in the 1950s, it did not meaningfully intersect with policymaking for decades. Robert Dorfman, *Mathematical, or “Linear,” Programming: A Nonmathematical Exposition*, 43 AM. ECON. REV. 797, 797 (1953) (“[M]arginal analysis . . . has led to conclusions of great importance for the understanding of many questions of social and economic policy. But . . . this mode of analysis has not recommended itself to men of affairs for the practical solution of their economic and business problems.”).

206. Adler, *supra* note 200 (“[I]t appears that distributional weights have rarely if ever been used by [cost-benefit analysis] practitioners in the U.S. government . . .”).

207. Weisbach, *supra* note 97.

208. Adler, *supra* note 200.

209. Weisbach, *supra* note 97, at 151–58.

210. Walter J. Mead, *Review and Analysis of State-of-the-Art Contingent Valuation Studies*, in *CONTINGENT VALUATION: A CRITICAL ASSESSMENT* 305, 307–08 (J.A. Hausman ed., 1993).

211. John Bronsteen et al., *Well-Being Analysis vs. Cost-Benefit Analysis*, 62 DUKE L.J. 1603, 1621 (2013).

212. Cass R. Sunstein, *Incommensurability and Valuation in Law*, 92 MICH. L. REV. 779, 786 (1994).

distributional weighting is even truly possible given agency resource constraints.<sup>213</sup>

But despite scholars' efforts to capture these non-numeric values in a cost-benefit framework, agencies often abandon cost-benefit analysis altogether—especially when top-down management cannot provide socially acceptable results. In these circumstances, agencies often do not myopically apply top-down risk management. In practice, agencies avoid the theoretical flaws of cost-benefit analysis by employing different tools for conditions of concentrated localized effects (leading to distributional issues), uncertainty, and moral ambiguity. Agencies specifically rely on *collaborative analysis*, or bottom-up policy formation—gathering qualitative input from non-agency stakeholders who stand to internalize the beneficial and harmful potential of various policy outcomes.<sup>214</sup> Despite its ubiquity in practice,<sup>215</sup> scholars have largely overlooked this alternative approach to risk management.<sup>216</sup>

Certainly, some scholars have suggested that only democratic processes or input, not economic analysis, can inform certain policy choices.<sup>217</sup> Cass Sunstein notes: “[P]eople, in both the public and the private sectors, are invited to provide information about the likely consequences. For all that public officials know, private citizens know far more. They are indispensable to a full accounting.”<sup>218</sup> Similarly, Robert Dorfman suggests that value judgments implicit in economic models on points like the value of human life and

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213. ADLER & POSNER, *supra* note 74, at 152 (questioning whether distributive weighting is, in fact, possible).

214. In some cases, particularly with technologically complex issues, inter-agency collaborative analysis may be necessary, in which many agency stakeholders operate together. Such inter-agency interactions have been noted in other contexts and exist already in risk management areas, like wildfire suppression. *See generally* Jennifer Nou, *Intra-Agency Coordination*, 129 HARV. L. REV. 421 (2015); Karen M. Bradshaw, *A Modern Overview of Wildfire Law*, 21 FORDHAM ENVTL. L. REV. 445 (2010).

215. Federal agencies make thousands of risk management decisions annually under a collaborative analysis model. *See* BRADSHAW, *supra* note 8, at 32–54.

216. ADLER & POSNER, *supra* note 74, at 83–87, 134–35 (overviewing alternatives to cost-benefit analysis as including “intuitive” decision-making premised on the intuitions of the agency officials, not members of the public; later noting that that some areas of life, such as abortion, go through the political process, in which the public finds common ground by working through disagreement); Coates, *supra* note 19, at 903 (listing alternatives to cost-benefit analysis but not including stakeholder-driven inputs).

217. ADLER & POSNER, *supra* note 74, at 134–35 (describing how the political process leads to exchange and compromise on decisions such as abortion).

218. SUNSTEIN, *supra* note 111.

endangered species are not questions of fact that experts are uniquely well-positioned to answer. Rather, they are “questions about social values and public preferences, that only the elaborate and clumsy procedures of democratic decision-making can answer.”<sup>219</sup> Others have framed such considerations in terms of the robust debate about the relative merits of federalism and decentralization in achieving various regulatory objectives.<sup>220</sup>

Despite some such acknowledgments, scholarly attention on the quantitative elements of cost-benefit analysis has largely overshadowed inquiry into the role of qualitative inputs in cost-benefit analysis and policymaking more broadly.<sup>221</sup> Near-universal enthusiasm for analytic data overestimates the potential of these tools, which, in turn, displaces other valid approaches to risk management.

Law and economic literatures alike lack a robust descriptive account, theoretical basis, and normative assessment of how agencies consult with stakeholders to determine the value judgments embedded in policymaking. Under a collaborative analysis framework, agencies seek direct input from the most affected stakeholders on the very kinds of questions that cost-benefit analysis cannot reach. These questions include what to do when data is unavailable,<sup>222</sup> how to allocate the distributional effects of a policy<sup>223</sup> and how to approach the moral implications of policies.<sup>224</sup> Collaborative analysis operates as an alternative for top-down decision-making; it is a crowdsourced variation of the kinds of calculations that agencies would make internally under top-down models. Theoretically, it could also complement top-down

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219. See ROBERT DORFMAN, *Why Benefit-Cost Analysis Is Widely Disregarded and What to Do About It*, in *ECONOMIC THEORY AND PUBLIC DECISIONS* 372, 373 (1997).

220. Daniel C. Esty, *Revitalizing Environmental Federalism*, 95 *MICH. L. REV.* 570, 572 (1996).

221. See Coates, *supra* note 19, at 893–94 (noting that financial regulators discuss policies with other experts outside the agency).

222. See David Weisbach, *Introduction: Legal Decision Making Under Deep Uncertainty*, 44 *J. LEGAL STUD.* S319, S319 (2015).

223. ADLER & POSNER, *supra* note 74, at 152 (discussing when agencies should add distributional weights to a cost-benefit analysis); Weisbach, *supra* note 97 (suggesting that cost-benefit analysis is an inappropriate vehicle for considering distributional questions).

224. See Ackerman et al., *supra* note 96.

decision-making by, for example, generating more accurate inputs into a cost-benefit analysis.<sup>225</sup>

This Article begins to fill the informational void surrounding collaborative analysis by answering the following interrelated questions: How do, and should, agencies consult with stakeholders to forecast policy outcomes and inform the value-laden distributional issues embedded in risk management policymaking? And how should courts evaluate such collaboration?

Although the *form* of collaborative analysis differs from formulaic cost-benefit analysis, the *function* of weighing the pros and cons of various regulatory approaches is essentially the same. One key difference is who is considering the pros and cons of a potential policy. In cost-benefit analysis, it is technocratic officials; under a collaborative analysis model, citizens are working to weigh the relative choices. This key democratic element describes why scholars and agency officials alike should consider the situations in which collaborative analysis works better than cost-benefit analysis, particularly in incorporating value judgments into policy.

*D. When Collaborative Analysis Works Well and When It Does Not*

Collaborative analysis provides benefits relative to cost-benefit analysis. It is most appropriate in localized but high-stakes decisions that elude analytical exactness. Potential benefits include improving valuation assessments, facilitating Pareto superior outcomes, broadening perspectives, generating alternative data, increasing social acceptance, overcoming group polarization, enabling resource pooling, and creating responsive policy. There are times, however, when it would be disastrous to use collaborative analysis. Concentrated control of decisions led by expert input is most valuable for decisions that are: time-sensitive, national in scope, involve clear safety considerations, and those with complicated scientific and mathematical factors.

Of course, the threshold question of whether stakeholders or academic experts should make decisions can lead to attempts to draw lines to suit one's ideological aims: Are vaccines localized to the family or sufficiently scientific to be left to experts? Is coal

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225. See *supra* Section II.A.4.

production about small Appalachian communities or the global issue of climate change?

Some academics are concerned that legitimizing collaborative analysis dethrones the position of “experts” on vital social issues. A workshop attendee asked, “If climate change is a debate rather than a scientific truth, won’t that eliminate our ability to get anything done?” Ironically, I believe the answer to that question is no.

Taking positions that one believes are correct and then defending those positions in litigation for decades can also be a bar to “getting things done.” This approach produces clear winners and losers—either “winning” side is heaping distributional costs on the losing side. As a result, the losing side hotly protests. Litigation or public stalemate ensues. Collaborative analysis, in contrast, opens the door to bargaining—allowing one party to achieve their objective, but requiring them to compensate the losing party.

Collaborative analysis may prove most appropriate in situations that meet the following five criteria:

- (1) a controversial decision or set of decisions must be made about a problem;
- (2) that decision is characterized by deeply uncertain risks that are difficult to quantify using analytic-data techniques;
- (3) that decision is also subject to evolving social, economic, health, or ecological conditions;
- (4) the consequences of the decision will be felt by a concentrated, identifiable set of stakeholders with deep interests and differing perspectives; and
- (5) no single agency has the resources or expertise to make and execute a decision alone.

Indeed, I later argue that these factors form the standard that courts should use to determine the appropriateness of agency reliance on stakeholder input in reaching a decision.<sup>226</sup>

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226. *See infra* p. 170.

Some agency decisions do not require crowdsourced qualitative inputs because the risks are diffusely spread across the entire population. Thus, experts can discern the risks using the democratic processes that generally inform the executive branch. Speed limits, vaccine recommendations, airplane safety, and toxic chemical regulations all reflect such calculi.<sup>227</sup> Even when the effects of decisions of considerable national importance disproportionately disfavor a particularized group, those decisions can be justified in terms of a broader social good.

In contrast, risks with disproportionately concentrated effects and only local or regional benefits lend themselves to a more directed inquiry into the welfare of those most affected by positive or negative policy outcomes. Decisions such as whether to list a particular species as endangered, develop a highway through a specific state, or thin trees from a specific national forest to reduce wildfire risk all provide examples of localized considerations. In these contexts, agency decisions made without stakeholder input may prove unpopular, and, consequently, be stymied by social backlash and litigation. Collaborative analysis becomes particularly crucial for agencies managing risks in deeply uncertain conditions, in which the data is unavailable or inconclusive.

To what extent are collaborative analysis techniques displacing, complementing, or inputting into cost-benefit analysis? At the most basic level, qualitative inputs can inform technical cost-benefit analysis. “Where benefits are difficult to quantify and monetize, governments can work with [cost-benefit analysis] technical experts for guidance and solicit feedback from stakeholders.”<sup>228</sup>

Collaborative analysis can also work in tandem with analytic-data techniques. For example, President Clinton issued an Executive Order requiring agencies to address issues of

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227. The judicial branch has also successfully regulated diffuse risks. Cass R. Sunstein, *On the Costs and Benefits of Aggressive Judicial Review of Agency Action*, 1989 DUKE L.J. 522, 528 (noting success of courts in regulating “DDT and airborne lead; control of asbestos, beryllium, and mercury; regulation of atmospheric loading, which produces acid deposition, disclosure requirements for hazardous chemicals; and regulation in the workplace of ethylene oxide and formaldehyde” (citations omitted)).

228. Darcy White & Torey Silloway, *Cost-Benefit Analysis*, EVIDENCE-BASED POLICYMAKING COLLABORATIVE (Sept. 2, 2016), <https://www.evidencecollaborative.org/toolkits/cost-benefit-analysis>. The Evidence-Based Policymaking Collaborative is comprised of the Urban Institute, Brookings Institution, American Enterprise Institute, and Pew-MacArthur Results First Initiative.

environmental justice.<sup>229</sup> Agencies could elect to satisfy this requirement by weighting cost-benefit analysis to account for environmental justice considerations, but they do not. Instead, they conduct parallel cost-benefit and environmental justice analyses. Collaborative analysis can also supplant cost-benefit analysis as a decision-making tool in some circumstances. Council on Environmental Quality regulations for pan-agency implementation of the National Environmental Protection Act (NEPA)<sup>230</sup> note that “the weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis and *should not be* when there are important qualitative considerations.”<sup>231</sup>

*E. Considering the Relative Roles of Cost-Benefit Analysis and Collaborative Analysis in the Climate Context*

To illustrate the relative benefits of the risk management tools of cost-benefit analysis and collaborative analysis, it is useful to consider how agencies are using both in the real world for a single issue: climate change.<sup>232</sup> Given a large number of unknown factors, agency responses include elements of risk management in actions ranging from regulating solar geoengineering to funding flood insurance policies in coastal areas. Scholars and commentators have focused on two data-driven policies as the core of federal climate change mitigation: the Clean Power Plan promulgated by the Environmental Protection Agency and the Paris Agreement.<sup>233</sup>

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229. Exec. Order No. 12,898, 3 C.F.R. 859 (1995), *reprinted as amended in* 42 U.S.C. § 4321 note (2018).

230. 42 U.S.C. §§ 4321 to 4370m-12 (2018).

231. 40 C.F.R. § 1502.23 (2019) (emphasis added).

232. See Daniel A. Farber, *Catastrophic Risk, Climate Change, and Disaster Law*, 16 ASIA PAC. J. ENVTL. L. 37 (2013).

233. 40 C.F.R. pt. 60; Joby Warrick & Chris Mooney, *196 Countries Approve Historic Climate Agreement*, WASH. POST (Dec. 12, 2015), <https://www.washingtonpost.com/news/energy-environment/wp/2015/12/12/proposed-historic-climate-pact-nears-final-vote/>; Glenn Sheriff, *Burden Sharing Under the Paris Climate Agreement* (Nat'l Ctr. for Envtl. Econ., Working Paper No. 16-04, 2016), [https://www.epa.gov/sites/production/files/2016-09/documents/2016-04\\_0.pdf](https://www.epa.gov/sites/production/files/2016-09/documents/2016-04_0.pdf).

Several commentators have expressed grave concerns about the eventual fate of these policy efforts within the United States.<sup>234</sup>

Collaborative analysis is emerging as the front lines of the federal response to climate change. Richard Posner has noted that climate change is the “poster child for the limitations of cost-benefit analysis.”<sup>235</sup> Climate scholars differentiate *mitigation*, which focuses on lessening anthropocentric climate change by reducing emissions, from *response*, which is reacting to the results of climate change, such as heightened sea levels and increased wildfire risk. Scholars, courts, and commentators have focused mainly on federal mitigation efforts premised on scientific and economic modeling.<sup>236</sup> Meanwhile, federal land and resource management agencies are on the front lines of climate change response even when the agency does not directly link the efforts to climate change. Such agencies focus on response, such as protecting at-risk wildlife and responding to catastrophic wildfires—tasks that cannot wait for Congressional action.<sup>237</sup> In these contexts, agencies use stakeholder engagement to gather resources and make controversial decisions amidst incomplete data.<sup>238</sup>

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234. In 2017, President Trump announced that the United States will withdraw from the Paris Agreement. *Statement by President Trump on the Paris Climate Accord*, WHITE HOUSE (June 1, 2017 3:32 PM), <https://www.whitehouse.gov/the-press-office/2017/06/01/statement-president-trump-paris-climate-accord>; Eli Stokols, *Donald Trump Withdraws from Paris Climate Deal Despite Allies' Opposition*, WALL STREET J. (June 2, 2017 12:44 AM), <https://www.wsj.com/articles/donald-trump-to-exit-paris-climate-deal-officials-say-1496343854>. Parties challenged The Clean Power Plan in court; President Trump later announced that he intended to repeal it. Adam Liptak & Coral Davenport, *Supreme Court Deals Blow to Obama's Efforts to Regulate Coal Emissions*, N.Y. TIMES (Feb. 9, 2016), <https://www.nytimes.com/2016/02/10/us/politics/supreme-court-blocks-obama-epa-coal-emissions-regulations.html>; Robinson Meyer, *Will a Reconfigured Supreme Court Help Obama's Clean-Power Plan Survive?*, ATLANTIC (Feb. 14, 2016), <https://www.theatlantic.com/politics/archive/2016/02/antonin-scalia-clean-power-plan-obama-climate-change/462807/>.

235. RICHARD A. POSNER, *CATASTROPHE: RISK AND RESPONSE* 155 (2004). *But see* Sunstein, *supra* note 18, at 381 (suggesting the use of maximin in situations, like climate change, where there exists “genuine uncertainty, in which probabilities cannot be assigned to the expected outcomes”).

236. EXEC. OFFICE OF THE PRESIDENT, *THE PRESIDENT'S CLIMATE ACTION PLAN* (2013), <https://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf>; 40 C.F.R. pt. 60; Warrick & Mooney, *supra* note 233.

237. Exec. Order No. 13,653, 3 C.F.R. 330 (2014).

238. *See* Bradshaw, *supra* note 69, at 467–77; Facemire & Bradshaw, *supra* note 21 (presenting a case study of several agencies cooperating to manage orca pods in the Puget Sound); *infra* Part I (presenting a case study of stakeholder collaboration to manage an Alaskan caribou herd).

President Obama issued an Executive Order anticipating the need for collaborative analysis in this area, noting, “Managing these risks requires deliberate preparation, close cooperation, and coordinated planning by the Federal Government, as well as by stakeholders, to facilitate Federal, State, local, tribal, private-sector, and nonprofit-sector efforts to improve climate preparedness and resilience . . . .”<sup>239</sup> Yet, current accounts of federal climate change, response, and risk management fail to account for the prominent role cost-benefit analysis is playing in practice.

Agencies are using a hybrid of analytic-data and collaborative analysis approach to create localized climate response policies. The U.S. Fish and Wildlife Service relies on collaborative tools made with stakeholders to make species-level decisions, including Recovery Plans, Candidate Conservation Agreements, and Habitat Conservation Plans. The Forest Service has implemented a nationwide Collaborative Forest Landscape Restoration Program to create socially acceptable policies to reduce wildfire management costs.<sup>240</sup> These examples highlight a broader point: Hundreds of stakeholder groups across more than one dozen agencies are using collaborative analysis to assess and respond to climate change risks. Anecdotally, stakeholder groups may reduce the polarizing effects of climate change in policy implementation.

In sum, agencies are using collaborative analysis to manage federal climate change response actions. Certainly, data on emissions is essential to developing EPA mitigation policies. Still, alternative forms of data, such as observations about permafrost melt from Alaskan Native communities, are also playing a vital role in agency action. Existing accounts of federal climate change risk management largely overlook the part of collaborative analysis. Yet, collaborative analysis may be doing the bulk of the work in response efforts. Incorporating this approach into future scholarly inquiry may produce a more complete account of how agencies are managing climate change response and other policy issues.

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239. Exec. Order No. 13,653, 3 C.F.R. at 330.

240. Omnibus Public Land Management Act of 2009, Pub. L. No. 111-11, § 4003, 123 Stat. 991, 1141 (codified as amended at 16 U.S.C. § 7303 (2018)).

## III. DOCTRINAL CONSIDERATIONS

Judges reviewing challenges to an agency decision informed by cost-benefit analysis or collaborative analysis should engage in a two-step inquiry: *First*, the court should determine whether the agency used an appropriate tool given the specific context of the case. If the tool selected was appropriate, the inquiry should then turn to the use of the tool itself. Thus, *second*, the court should evaluate whether the tool was deployed correctly. Others have thoroughly covered the subject of how judges review the methodological correctness of cost-benefit analysis.<sup>241</sup> I apply their same analysis of the correct use to collaborative analysis. Importantly, the inquiry is on the procedural elements of the tool. The substantive outcomes and ultimate success of the usage falls outside the scope of judicial inquiry and is instead under the control of agencies.

Under what conditions will an agency's reliance on collaborative analysis satisfy judicial review that the agency's decision is in keeping with the Administrative Procedure Act and other substantive statutes?

Courts should acknowledge collaborative analysis as evidence that an agency has adequately considered a policy choice, provided that the agency met certain procedural protections. Collaborative analysis can complement, or even displace, top-down decision-making, especially under circumstances of deep uncertainty and concentrated, identifiable potential harm.<sup>242</sup>

Integrating collaborative analysis into judicial assessment of challenges to agency action is easier than it may appear. The first step is that courts must decide on a case-by-case basis when collaborative analysis satisfies the agency's obligation to gather the information that informs policy choices.<sup>243</sup> As I demonstrate below, courts have been balancing the need for cost-benefit analysis with alternative tools of public participation since at least 1974. I highlight the existing case law on this point and explain its relationship to a persistent debate in risk management literature.

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241. See generally, e.g., Masur & Posner, *supra* note 192.

242. See *supra* Section II.D for a five-factor test of when collaborative analysis is most appropriate.

243. 5 U.S.C. § 706 (2018).

Then, I argue that courts can streamline such analysis by employing my five-factor test of circumstances in which collaborative analysis works best.<sup>244</sup>

A line of jurisprudence within the Ninth Circuit suggests that courts have long understood the relationship between cost-benefit analysis and public participation. It treats them as complements – suggesting that heavy reliance on one might excuse a lack of reliance on the other and that each is appropriate in different circumstances. For over fifty years, Ninth Circuit judges have decided on the conditions under which cost-benefit analysis is necessary and those in which other tools are better suited.

In *Trout Unlimited v. Morton*,<sup>245</sup> the court held that a cost-benefit analysis is not a necessary part of an EIS. It states:

This conclusion rests upon the hard fact that there is sufficient disagreement about how environmental amenities should be valued to permit any value so assigned to be challenged on the grounds of its subjectivity. It follows that in most, if not all, projects the ultimate decision to proceed with the projects, whether made by Congress or an agency, is not strictly a mathematical determination. Public affairs defy the control that precise quantification of its issues would impose.<sup>246</sup>

Essentially, the court is saying that in situations of methodological uncertainty a mathematical outcome would be deeply subjective. Moreover, it acknowledges that quantification alone cannot answer broader public affairs.

Similarly, in *Columbia Basin Land Protection Association v. Schlesinger*,<sup>247</sup> a panel of the Ninth Circuit ruled that the need for a cost-benefit analysis in an EIS was context-dependent:

The law in this Circuit is clear that a formal and mathematically expressed cost-benefit analysis is not always a required part of an EIS. This is not to say that a mathematical cost-benefit analysis is never required. If an alternative mode of EIS evaluation is insufficiently detailed to aid the decision-makers in deciding

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244. See *supra* Section II.D. For a discussion of expanding the degree of deference that courts offer agencies under uncertain conditions, see Jacob E. Gersen & Adrian Vermeule, *Chevron as a Voting Rule*, 116 *YALE L.J.* 676 (2007).

245. *Trout Unlimited v. Morton*, 509 F.2d 1276 (9th Cir. 1974).

246. *Id.* at 1286.

247. *Columbia Basin Land Prot. Ass'n v. Schlesinger*, 643 F.2d 585 (9th Cir. 1981).

whether to proceed, or to provide the information the public needs to evaluate the project effectively, then the absence of a numerically expressed cost-benefit analysis may be fatal.<sup>248</sup>

The court acknowledged the existence of alternative forms of evaluation but did not identify what they may be.<sup>249</sup> It cabined reliance on such alternative methods, however, by noting that cost-benefit analysis may be required in other contexts.<sup>250</sup>

Such judicial acceptance of collaborative analysis as an alternative to cost-benefit analysis under conditions of uncertainty may resolve a central debate within risk management literature—how agencies should form policy under conditions of deep uncertainty and how courts should review such decisions.<sup>251</sup> Judges appropriately deem agency decisions arbitrary and capricious<sup>252</sup> when they are premised on mischaracterizations of data or a knowing unwillingness to analyze credible information that is readily available.<sup>253</sup> Yet, what should courts do when the requisite inputs are not available?<sup>254</sup>

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248. *Id.* at 594 (citations omitted).

249. *Id.*

250. *Id.*

251. In June 2015, the peer-reviewed *Journal of Legal Studies* devoted an issue to legal decision-making in conditions of deep uncertainty. In a series of articles, preeminent scholars discussed how agencies make decisions when the information one would want to premise a decision on is unknown. See Weisbach, *supra* note 222.

252. 5 U.S.C. § 706(2)(A) (2018). If Congress provides ambiguous statutory guidance on a point—as is almost always the case in risk assessment—then courts afford agencies discretion. See *United States v. Mead Corp.*, 533 U.S. 218 (2001); *Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837 (1984).

253. *WildEarth Guardians v. U.S. Bureau of Land Mgmt.*, 870 F.3d 1222 (10th Cir. 2017) (requiring the Bureau of Land Management to reassess climate change impacts of expanding coal mines when the agency stated that its decision would have no effect on climate change without providing a basis for those claims); *Sierra Club v. U.S. Army Corps of Eng'rs*, 701 F.2d 1011 (2d Cir. 1983) (vacating agency issuance of a landfill permit because the agency failed to account for the ways in which the project would affect the juvenile striped bass); *N. Spotted Owl v. Hodel*, 716 F. Supp. 479 (W.D. Wash. 1988) (remanding the decision not to list the Northern Spotted Owl to the U.S. Fish and Wildlife Service because the agency based its decision on a blatant mischaracterization of scientific information provided by an expert).

254. If judges require more exactitude than agencies can provide, absurd outcomes can result. After the Supreme Court articulated a standard requiring an agency to employ a method that “most adequately assures, to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity,” *Indus. Union Dep’t v. Am. Petrol. Inst. (Benzene Case)*, 448 U.S. 607, 612 (1980) (quoting 29 U.S.C. § 655(b)(5) (2018)), OSHA created estimates fully knowing that the risk analysis could vary millionfold depending on the model selected. See Thomas O. McGarity, *Some Thoughts*

Thus far, scholarly analysis of agency behavior and judicial review amidst deep uncertainty has unfolded along three lines of reasoning. Each focuses on some nexus of data and discretion. *First*, empiricists tend to double down on data, calling for new models, more funding for research, and more time to discern accurate information.<sup>255</sup> *Second*, administrative legal scholars tend to focus on courts' assessments of agency actions amidst uncertainty and relaxed standards on experimental decisions.<sup>256</sup> Adrian Vermeule describes this as a "rationally arbitrary decision" and suggests that even when data is not available, agencies must make some decision, which courts should not second guess.<sup>257</sup> *Third*, ecologists and environmental law professors tend to advocate for the Precautionary Principle, which is that avoiding known harm should always be the tie-breaker.<sup>258</sup>

Notably, each of the existing approaches overlooks the potential of collaborative analysis to function as a tie-breaker, a complementary instrument used to generate, evaluate, and incorporate ideas from expert members of the public. Agencies faced with deep uncertainty and a lack of high-quality quantitative data should adopt a democratic approach to risk management.

Despite a long line of such cases, the court has not yet engaged with the specific circumstances under which alternative tools (such as collaborative analysis) can displace cost-benefit analysis. For this, I return to the five-factor test of when collaborative analysis works best:

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on "Deossifying" the Rulemaking Process, 41 DUKE L.J. 1385, 1402 n.74 (1992) (describing the plurality opinion in the Benzene Case as "an ideal illustration of a confused approach to risk assessment in the public health context"); Susan Rose-Ackerman, *Progressive Law and Economics – and the New Administrative State*, 98 YALE L.J. 341 (1988).

255. See, e.g., POSNER, *supra* note 235. Agencies sometimes do not have the luxury of waiting and must issue a decision within a specified time. See, e.g., *Massachusetts v. EPA*, 549 U.S. 497 (2007).

256. See, e.g., Jonathan S. Masur & Eric A. Posner, *Unquantified Benefits and the Problem of Regulation Under Uncertainty*, 102 CORNELL L. REV. 87, 92 (2016) (suggesting that "agencies should be permitted to 'guess' what harms and benefits will be under conditions of uncertainty").

257. Adrian Vermeule, *Rationally Arbitrary Decisions in Administrative Law*, 44 J. LEGAL STUD. S475, S475 (2015). *But see* Masur & Posner, *supra* note 192, at 950 ("To review valuations on substantive grounds, courts need to second-guess judgments that lie at the heart of the agencies' expertise.").

258. ACKERMAN & HEINZERLING, *supra* note 151, at 139–40.

- (1) a controversial decision or set of decisions must be made about a problem;
- (2) that decision is characterized by deeply uncertain risks that are difficult to quantify using analytic-data techniques;
- (3) that decision is also subject to evolving social, economic, health, or ecological conditions;
- (4) the consequences of the decision will be felt by a concentrated, identifiable set of stakeholders with deep interests and differing perspectives; and
- (5) no single agency has the resources or expertise to make and execute a decision alone.

Judges have been implicitly going through these factors in deciding whether cost-benefit analysis is required.<sup>259</sup> If they accept that a particular case satisfies these conditions, the decisions then turn to the procedural safeguards and democratic participation of the stakeholder group—analysis that may be informed by law or regulation dictating the collaborative analysis model. This appropriately shifts judicial review away from technical analysis of the availability of data and towards questions of procedural fairness.

After establishing that democratic decision-making was the appropriate tool for a particular test, the court should turn to evaluating whether the particular application of the tool was appropriate. It needs to assess when stakeholder collaborations meet (or fail to meet) the procedural fairness standards embedded in the Administrative Procedure Act and various substantive statutes. Here, again, courts have long shown willingness to engage in precisely such analysis.<sup>260</sup> It strikes at the heart of what they do as a matter of institutional competency.<sup>261</sup>

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259. See cases cited *supra* notes 168-78, 254-632.

260. See *infra* notes 168-178 and related text.

261. Anya Bernstein, *Differentiating Deference*, 33 YALE J. ON REG. 1, 52 (2016) (“[Courts] have considerable experience with evaluating procedures at a relatively high level of generality.”).

## CONCLUSION

In this Article, I challenge the orthodox view that agencies should base their decisions on a quantified analysis of benefits and harms. Certainly, top-down risk management informed by quantitative analysis is the best approach in some contexts. But the widespread consensus that cost-benefit analysis is almost always the right approach presents an untested empirical claim that conflicts with practice.

Identifying and describing collaborative analysis is the first step in a broader scholarly conversation about the need to cabin overreliance on data-driven policy. Analytic-data theory is useful in many situations, but it can prove harmful in others. Current over-reliance on top-down decision-making has led scholars to overlook a widely used alternative technique. Acknowledging the ubiquity of collaborative analysis in the administrative state invites a variety of additional scholarship, ranging from assessment of the efficacy of the method to variations on the tool of stakeholder collaborations that satisfy the same function. Perhaps most importantly, this Article serves to integrate practice and data from other fields to challenge current legal scholarship that insists on a sometimes-questionable policymaking tool.

Just as data-based decisions must be adequately responsive to relevant science, so too must collaboration-based decisions conform to some standard of acceptability. The calculus of the procedural integrity of collaborations is far more within the realm of courts' abilities, however, than is second-guessing agencies' data analysis.<sup>262</sup> Also, FACA clarifies that agencies may not delegate their ultimate decision-making authority to stakeholder groups. This ensures that, however influential a stakeholder group is, the agency is ultimately legally and politically accountable for making sound decisions.

Further, collaborative decisions do not override the distinct procedural protections embedded into NEPA and substantive elements of other statutes, like the Endangered Species Act. Indeed, it is within the confines of the overlapping statutory regimes—imposing requirements that decisions incorporate “best available

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262. Cf. Masur & Posner, *supra* note 192, at 950 (arguing that courts can and should engage in a heightened review of cost-benefit analysis).

science” — that Congress guards against irresponsible stakeholder or agency action. Notice-and-comment periods, which some statutes require, continue to play an essential role in democratic accountability by incorporating the voices of people who care about the decision but are not members of the collaboration. Collectively, these statutory guideposts cabin the most serious concerns about collaborative analysis, inappropriately displacing analytic-data analysis.

A fundamental question underlying democratic decision-making is: Who gets a seat at the table? Agencies are struggling to make such determinations on a case-by-case basis, as with the founders of the WACHWG deciding to allocate each regional group of Alaskan Native Communities one of twenty seats. Alternatively, the group could have granted one position to each of the forty to fifty communities, or a single place to represent all Alaskan Native Communities. Such decisions influence substantive outcomes. Decisions made by the WACHWG would likely be far more favorable to Alaskan Native interests if each of the forty to fifty communities received a position, and there was only a single seat reserved for non-native hunting guides. In other words, deciding who is eligible to participate, and to what degree, is a vital, sometimes determinative question in collaborative analysis. Scholarly work on answering this question is not only theoretically interesting, but also important to informing judicial inquiry surrounding the procedural fairness of stakeholder groups.

Similarly, the various tools of democratic decision-making are relatively poorly defined. By contrast, scholars tend to be more familiar with the analytic-data tools of top-down risk management—such as cost-benefit analysis, feasibility analysis, and min-max—and the corresponding degrees of judicial deference. Although ecologists and social scientists have provided some typologies of collaborative governance, legal analysis of the rules governing various tools, and judicial deference paid to them, is relatively undeveloped.<sup>263</sup> Future scholarship may engage with whether, and how, voting processes work in real-world collaborative groups and the lengths to which judicial inquiry of

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263. For a rough typology of various democratic decision-making tools agencies use—including, but going well beyond, stakeholder collaborations—see BRADSHAW, *supra* note 8, at 20–24.

procedural fairness should track different tools within the cannon of democratic decision-making.

More broadly, the study of collaborative analysis also contributes to the persistent, ongoing debate about the relative merits of federalism versus decentralization in agency policymaking.<sup>264</sup> It acknowledges that analytic decision strategies are necessary for some contexts but utterly inappropriate in others. This mirrors a generalized consensus—extending beyond the risk management arena—that some categories of decisions are best suited to collaborative analysis.

Behavioral economics had a considerable effect on legal scholars, some of whom now believe that people's decision-making biases render them ineffective at making decisions. In conditions of imperfect government data assessment, however, resource users may be best positioned to assess conditions and forecast resource availability and social responses to various policy choices. The iterative nature of collaboration—relative to the single-shot nature of regulation—suggests that the decision-making body acts as a system that can continuously update itself and adapt to new information and changed conditions. Further, the integration of non-scientific factors to influence policy decisions makes sense in situations where the data or models are deeply uncertain. Updating law and theory to integrate collaborative analysis has considerable potential to improve agency function.

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264. Esty, *supra* note 220.

