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Is Anybody Reading This? How Environmental Management Practitioners Incorporate Public Comment

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Abstract

Environmental management (EM) practitioners around the world struggle to incorporate public comment when it does not use technical rationality, which is based in the norms of science. Considering comments based on cultural rationality, which is based in lived experience, story, and analogy, can create tensions for the individuals and project teams tasked with achieving robust, sustainable decisions. This qualitative, interpretive study collected data from the primary investigator's work at the Idaho National Laboratory combined with interviews with 16 EM practitioners. Participants in this study recognized the value of both technical and cultural rationality in the decision-making process. The participants' acceptance of the two forms of rationality demonstrated dialectical complexity and reduced the tensions inherent in these decision-making processes. Effective incorporation of public comment requires transdisciplinary project teams with relatively flat power structures that enable dialogue and deliberation.

Introduction

Public participation is a required element of decision-making processes in democracies around the world. However, even when public comments are requested, members of the public may wonder whether their comments are meaningfully considered during the decision-making process. Although the public comment process itself is highly visible and has been researched extensively, the incorporation of public comments by decision-making teams (and the lack of transparency surrounding it) has been the focus of much less research.

The primary investigator took advantage of her working relationship with the Idaho National Laboratory, an energy research facility in the western United States. During the course of more than 5 years supporting public participation projects, she observed that some individuals and project teams accepted and incorporated the public's comments into their decisions more readily than others. The primary investigator's experience with complex environmental decision-making suggests that incorporating public comment can be extremely challenging for environmental management (EM) practitioners, often creating tensions for individual practitioners and teams. This research reported here is a preliminary description of the characteristics and communication strategies that enable individuals and teams to more thoroughly consider and incorporate public comments, resulting in decisions that are robust to the needs and values of the public.

Literature Review

Communication scholars have identified two common approaches to decision-making in public participation processes, each of which is logical and coherent on its own terms. Technical rationality is a formal Western linear decision process that emphasizes scientific norms of

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quantification, objectification, and replication (Krimsky and Plough, 1988). Cultural rationality, in contrast, emphasizes lived experience, story, analogy and feelings (Duffield Hamilton, 2003).

Historically, decisions made in the extractive industries and energy sector have given greater weight to quantitative evidence of risks, corresponding with technical rationality (Krimsky and Plough, 1988). The EM practitioners working in these fields are predisposed to favor technical rationality because it results in solutions that are perceived to be more defensible by the officials charged with approving the practitioners' decisions. However, the public's comments often focus on their lived experiences and feelings, corresponding with cultural rationality (Duffield Hamilton, 2003). In public settings, EM practitioners and members of the public have begun to embrace different forms of rationality (Duffield Hamilton, 2003), but it is unclear whether EM practitioners' use of cultural rationality in public contexts extends into the decision-making process, which is opaque to the public. The public may feel that EM practitioners' use of cultural rationality is not genuine and that technical rationality is all that is used to make the final decision. This conflict between the technical rationality of EM practitioners and the cultural rationality of the public can create barriers to effective public participation and create tensions for the practitioners.

Tensions are created when two values are in contradiction (Simon, 1993/1947). Using the two forms of rationality, which are seemingly contradictory, can create internal tensions in individuals and teams who try to incorporate both forms into their decision-making. The uncertainty of science is one source of tensions. Complex environmental issues require decisions to be made using information that is always imperfect, incomplete, or provisional (Simon, 1993/1947). When data is inadequate, augmenting a decision with reasoning based on cultural rationality can help to mitigate concerns that the imperfect data will undermine the decision. However, this conflicts with the perceived stigma of using cultural rationality. Another source of tension arises from an EM practitioners' recognition that they are EM practitioners at the same time they are members of the public. Many practitioners live and work in the project location and are affected by project decisions in the same way as are other members of the public.

When faced with tensions caused by competing forms of rationality and complex, clashing perspectives on an issue, EM practitioners must fairly evaluate each dimension and perspective to create a robust, sustainable decision. When they do so, they are demonstrating a psychological construct called dialectical complexity. Dialectical complexity refers to a speaker's examination of competing factors and ideas on an issue and can be approximately thought of as open-mindedness (Conway et al., 2008). When EM practitioners balance tensions and perspectives, they are demonstrating dialectical complexity. This balancing act can be done at the individual or group level. Complexity is value-neutral but, in the context of decision-making, is associated with several benefits (Suedfeld, Leighton, & Conway, 2006). Complexity is associated with using more available information to make decisions and making decisions that are more stable and satisfying to stakeholders because relevant perspectives are discussed (Suedfeld, Leighton, & Conway, 2006). However, decision-making that demonstrates high levels of complexity takes more time and effort and, thus, may not be appropriate for time-sensitive decisions (Suedfeld, Leighton, & Conway, 2006).

The difficulties of incorporating public comment and the tensions practitioners experience are not limited to any one geographic location or sector of industry. These are issues that individuals and project teams face around the world every day. Investigating how EM practitioners manage the tensions inherent in using both technical and cultural rationality allows us to identify the communication strategies they use during complex decision-making and suggest how organizations in other fields may manage similar challenges. Two research questions initially guided this study: (1) To what extent do EM practitioners use cultural rationality in environmental decision-making, and (2) How do EM practitioners who use cultural rationality manage the tensions that arise from its use.

Methods
The study was conducted from a qualitative, interpretive standpoint using data collected during the primary investigator's work at the Laboratory combined with in-depth semi-structured interviews with 16 participants, all of whom were EM practitioners with more than 15 years of experience. The participants were selected through strategic snowball sampling based on their reputation among their peers at the Laboratory for leadership on high-quality public participation projects. Eleven of the participants fully completed the interviews. The interviews were coded and analyzed using modified grounded theory (Charmaz, 2006).

Results
The data confirmed that some EM practitioners recognize and use cultural rationality. Further analysis of the data resulted in four major findings about how EM practitioners use cultural rationality. The first finding addresses the two forms of rationality and the tensions created by using both forms on complex projects with inadequate or incomplete data. Several participants acknowledged that cultural rationality is a mode of reasoning complementary to technical rationality. They emphasized that full incorporation of public values and opinions early in the process is important to reaching a successful solution. As one participant stated: "Some [EM practitioners] will deny they do or should take public opinion into account in a 'technical' analysis, others are more pragmatic and know any option without public acceptance won't be successful, so [they] build this type of thinking into their analysis early." These participants perceive that incorporating cultural rationality allows better, more robust decisions and said they use cultural rationality when the decision-maker allows them to do so. By allowing the use of cultural rationality, the decision-maker weakens the perceived stigma against cultural rationality and removes one source of tensions for EM practitioners. However, some participants said that some decision-makers discourage use of anything other technical rationality.

The second finding addresses the tension that arises when practitioners identify both with their profession and the public. One participant said, "Being a responsible steward of both the environment and limited taxpayers' resources are equally important (i.e., it IS my backyard and it IS my dollar)." [emphasis in original] This participant views themselves as not just an EM practitioner but also as a member of the affected public whose interests should be considered. EM practitioners involved in effective public participation recognize they are simultaneously professionals and members of the public, and they use cultural rationality when it will be helpful in achieving a successful and more broadly acceptable outcome.

The third finding is that EM practitioners demonstrate dialectical complexity. When asked about the characteristics of an EM practitioner who excels at considering public comment, a participant listed the following: "Ability to balance all the factors that go into a decision such as technical defensibility, cost benefit from action, negotiations between stakeholders, [the conviction] to do what is right, ability to articulate the information in a compelling manner." Although participants weren't explicitly aware that they were demonstrating dialectical complexity, they identified the importance of exploring various perspectives to achieving the best possible decisions. Participants recognized the need to be open-minded, even to a form of reasoning that is stigmatized, perceived as contrary to traditional Western logic, and sometimes even explicitly prohibited.

The fourth finding identified strategies used by participants that allowed them to incorporate public comment in decision-making. The participants said they considered multiple viewpoints, including technical, economic, and public values. They suspended judgment, asked questions, considered other points of view, and weighed other team members' opinions before reaching a conclusion. These elements are hallmarks of dialogue and deliberation (Flick, 1998; Gastil and Levine, 2005). Using dialogue and deliberation fostered a communal, positive atmosphere within the decision-making process, which extended to embracing the public as a contributor in the process. Some team members served as champions for other perspectives, including ideas initiated as a result of public comment. These strategies allowed project teams to negotiate and build consensus for a decision that could be supported by all members of the team, the decision-maker and, ultimately, the public. Teams that reached consensus were more confident in their decisions, reducing the tension of uncertainty.

The Laboratory that was the site of this research used a matrixed organizational structure in which EM practitioners worked in transdisciplinary teams created to solve the complex environmental cleanup challenges for which public participation was required (Gottlieb, 2007). The relatively flat power structures in these teams ensured that no one discipline dominated and that each discipline had the opportunity to contribute meaningfully throughout the decision-making process. Working in transdisciplinary teams required EM practitioners with good communicative competence (Canale and Swain, 1980). Specific strategies used by EM practitioners in these teams included setting aside assumptions and biases, information-seeking, listening to understand, suspending judgment, questioning uncertainty, and building consensus (Makau and Marty, 2013). The transdisciplinary teams that excelled also relied on their collective intelligence, the shared knowledge that emerges from collaboration and consensus decision-making, to reach consensus decisions that incorporated both technical and cultural rationality (Bonabeau, 2009). The use of transdisciplinary teams and collective intelligence further support the importance of dialectical complexity and dialogue and deliberation in the decision-making process.

Discussion and Conclusions
The participants in this study recognized the value of both technical and cultural rationality in the decision-making process. Accepting the two forms of rationality required the open-mindedness inherent in dialectical complexity and reduced the tensions experienced during the decision-making process.

Some individuals and project teams were more effective at incorporating public comment during decision-making. Two elements were identified as important for project teams:
- Transdisciplinary membership to ensure diversity of thought and experience.
- Flat power structure to ensure each perspective is weighed fairly during deliberation and no one discipline or individual dominates the decision-making process.

Two elements were identified as important for individuals:
- Communication competence, especially acknowledging biases and assumptions, listening to understand other perspectives (including other disciplines and the public), and negotiating to build consensus, to enable the team to engage in dialogue and deliberation.

A fourth element, which was identified from framing the results in terms of dialectical complexity, is important to achieve decisions robust to decision-maker and public values and needs:
- Fair and strong representation of varied perspectives and acceptance of both technical and cultural rationality to achieve decisions that reflect the collective wisdom of internal and external stakeholders.

Recommendations
Organizations and EM practitioners involved in public participation projects can use these findings in several ways.

1. Decision-makers should allow EM practitioners to use cultural rationality in conjunction with technical rationality to achieve robust, sustainable solutions. Setting the two types of rationality in opposition increases tensions in individuals and groups, reducing EM practitioners' ability to incorporate public concerns and values. However, accepting both can lead to better decisions.

2. EM practitioners should seek professional development opportunities to improve their communication competence, especially the skills of dialogue and deliberation. These skills are a necessary component of the 21st century workplace but may not yet have been cultivated to the extent necessary, especially for recent college graduates. EM practitioners who already have excellent communication skills should provide mentorship and coaching for others.

3. Public participation project teams should be transdisciplinary and use relatively flat power structures that emphasize collaboration, negotiation, and conflict management. Transdisciplinary teams will enable EM practitioners to consider the full range of perspectives present in complex environmental challenges, including those of the affected public and decision-makers. Team leaders should promote the use of champions to articulate each perspective.

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