Reassessing Public Meetings as Participation in Risk Management Decisions

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Introduction

While involving citizens in risk management seems key to developing enduring, acceptable public policy decisions, the appropriate methods for citizen involvement and risk communication are not always evident. Choosing an inappropriate method, or relying too heavily on one method over another, can send signals to citizens that their views are not being adequately considered. Apart from immediate impasses in environmental decision-making, such signals may have far-reaching impacts on ongoing and future relations between citizens and risk managers.

For example, most risk managers, responsible for communication to non-technical or "lay" audiences, recognize that approaches such as "top-down" or persuasive models, are inadequate to meet most audience's information needs. These approaches may even make people more suspicious if they are convinced they are not receiving the "whole story".[1] Even if we take measures to promote trustworthiness, others argue that our continued reliance on traditional methods of risk communication may counteract efforts to build trust between risk managers and lay audiences. Daniel Kemmis argues that society's over-reliance on "the process" has inhibited our ability to solve controversies:[2]

> The common ground is present...but our prevailing way of doing things blocks us from realizing it. Our failure to realize is twofold: we do not recognize the common ground

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1 Lynn J. Frewer, et al., *What Determines Trust in Information About Food-Related Risks? Underlying Psychological Constructs*, 16 **Risk Analysis** 473 (1996).

2 Daniel Kemmis, **Community and the Politics of Place** 64 (1990).

> (a failure to realize its existence), and we do not make it a reality (a failure to realize its potential). This twofold failure leaves our communities poorer than they need to be.

In light of continued emphasis on citizen involvement in environmental policy making, the process of citizen involvement may add to or detract from efforts to communicate risk and build lasting relationships between citizens and risk managers. This concept merits further investigation.

To this end, this paper presents the latest results from an ongoing research project which examines the impact of public participation and communication process, public meetings, on risk management decisions. This particular study focuses on citizen participation in public meetings surrounding a community's decision about whether to accept or reject a new county landfill. Building on previous research,[3] this study compares attitudes and behaviors of citizens who attended public meetings about a proposed landfill to attitudes and behaviors of citizens who did not attend the meetings. In particular, this study sought to determine whether participants in public meetings represented citizens not in attendance, especially in their attitudes, communication behaviors, and demographic characteristics.

Hearings vs. Meetings

First, a clarification between "public meetings" and "public hearings" is useful. Public hearings are often referred to as public meetings, and indeed, that is essentially accurate. However, not all public meetings are public hearings. There is one primary difference: public hearings are legally required, while not all public meetings are. As a result, public meetings do not need to adhere strictly to the traditional public hearing format.

The typical public hearing format for a landfill permit generally includes an audience of interested citizens that sit facing a panel. The panel may be comprised of a representative of the regulatory agency, the permit applicant, technical and legal experts, and voting officials. A court reporter is usually present to record all questions and comments. The hearing generally commences with formal presentations from the

3 Katherine McComas & Clifford W. Scherer, *Risk Perceptions of Participations at Public Meetings: The Potential for Risk Amplification,* (unpublished paper presented at Society for Risk Analysis Annual Meeting 1996).

panel, which are then followed by questions and comments from the audience. Whether this format inadvertently establishes an "experts versus citizens", or adversarial mindset, is one issue that may merit further examination.

In comparison, public meetings often have greater flexibility in how they are planned and conducted. They have more freedom to experiment with more informal formats. Anecdotal evidence suggests, however, that the terms, "public meetings" and "public hearings" are often used interchangeably, and the distinction between hearings and meetings may be lost on the casual observer.

Previous Research

Despite their prominence as a mechanism for public involvement in policy making, public hearings have received little attention in the research literature. Furthermore, the relatively few evaluations of the effectiveness of public hearings have shown mixed results. Critics of public hearings argue that the hearing process is geared to minimal results, in terms of actually taking citizens' comments seriously[4] or that very little "hearing" occurs at many public hearings.[5] Still, few researchers have systematically examined whether public hearings meet the needs of those who organize the hearings, whom this article terms the "risk managers," or the citizens who participate in them.

In any given context, these needs may clearly differ. For example, in an examination of multiple forms of citizen participation in environmental policy making, Heberlein classified public hearings as informative, cooptative, ritualistic, or interactive.[6] He describes the goals of the first three-the informative, co-optative, and ritualistic-as mostly that of satisfying legal requirements and sometimes allowing irate citizens to "let off steam" about a proposed project.[7] As such, these goals seem primarily geared to meet the needs of the risk managers. The interactive hearing, in comparison, is held to listen and

4 Barry Checkoway, *The Politics of Public Hearings*, 17 **J. of Applied Behav. Sci.** 566 (1981).

5 Kemmis, *supra* note 2.

6 Thomas A. Heberlein, *Some Observations on Alternative Mechanisms for Public Involvement: The Hearing, Public Opinion Poll, The Workshop and The Quasi-Experiment*, 16 **Nat. Resources J.** 197, 200 (1976).

7 *Id.*

respond to citizen input, a goal that seems geared to meet citizens' needs, as well as risk managers' needs. Heberlein and others argue, however, that the interactive hearing is usually less common than the other three types of hearings.[8]

However, if public hearings are held to gather and respond to citizen input the issue of citizen representation becomes key-namely, do citizens who attend the hearings represent those who do not attend? In one of a few studies to examine this question, Gundry and Heberlein used cross-sectional surveys in three settings to compare demographic characteristics and opinion variance between citizens attending public meetings and citizens not attending the meetings (but whom were still considered stakeholders).[9] The results found, contrary to commonly held assumptions, that there were few significant differences between citizens attending meetings and those not attending.[10] Although demographic differences were present in each study, no one particular demographic characteristic predominated. Regarding issues of concern raised at the meetings, the study found that citizens attending the meetings held opinions similar to citizens not attending the meetings.[11] Moreover, the results showed that sometimes citizens not attending the meetings held stronger, more extreme opinions than citizens attending the meetings.[12] These findings led the authors to conclude that when meetings are well-publicized and easily accessible, and when all participants are consulted about their opinions, the views of citizens attending public meetings can sometimes broadly represent the opinions of citizens not attending.[13]

Differences between citizens who attend public meetings and those who do not attend public meetings have also been found. McComas and Scherer used mailed surveys to compare attitudes and behaviors of citizens attending public meetings about a proposed landfill siting to those not attending public meetings.[14] The results showed that while

8 Checkoway, *supra* note 4.

9 Kathleen G. Gundry & Thomas A. Heberlein, *Do Public Meetings Represent the Public?,* **J. of the Am. Planning Assoc.** 175, 176 (Spring 1984).

10 *Id*. at 180.

11 *Id*.

12 *Id*. at 181.

13 *Id*.

demographic characteristics were similar between the two groups, citizens attending the meetings tended to be angrier about the proposed landfill and more worried about its effects on their home and property values.[15] Kihl and Renz have found comparable results in their research.[16]

In addition, among those citizens attending the public meetings, McComas and Scherer found a great deal of negativity toward the meetings and their organizers. The majority of meeting attendees responding to the survey did not consider the meetings informative, well organized, or responsive to different viewpoints. Most attendees also disagreed with the statement, "I felt better after most of the meetings than I did before I attended them".[17]

The results from the same study indicated that these respondents were also more likely to talk to other people in the community (family members, neighbors, elected officials) about their concerns.[18] This lead the authors to question what repercussions public meetings may have on opinions of citizens not attending the meetings. Talking with others about the landfill is a means of both gathering and disseminating information. If citizens who attend public meetings were more negative about the landfill, as well as more likely to talk with others about the landfill, then the question is whether these conversations may influence others' attitudes about the landfill.

On the other hand, some research indicates that public hearings can occasionally be effective tools of citizen participation. Examining hearings from a policy maker's perspective, Cole and Caputo investigated the impact of public hearings for non-environmental subject, the Federal General Revenue Sharing Program. The authors found that in some cities, the presence of public hearings was associated with greater spending, public interest, and net fiscal effect, although

14 McComas & Scherer, *supra* note 3.

15 *Id.* at 10.

16 *See* Mary R. Kihl, *The Viability of Public Hearings in Transportation Planning*, 21 **The J. of Applied Behav. Sci.** 185 (1985).

See Mary Ann Renz, *Communicating about Environmental Risk: An Examination of a Minnesota County's Communication on Incineration,* 1 **J. of Applied Com. Res.** 1 (1992).

17 McComas & Scherer, *supra* note 3 at 13.

18 *Id.* at 12.

other cities showed no association.[19] The authors concluded that the public hearings had little effect overall on the policy making process, but they did speculate that the public hearings may have had other positive outcomes for the participants themselves.[20] Despite the strength of ten years of longitudinal data, however, the results only represent the views of chief executive officers of the Revenue Sharing program in cities with populations exceeding 50,000; no hearing participants were interviewed. As a result, whether the hearings actually met citizens' needs remains unknown.[21]

Addressing public hearings from a "communications" perspective, Kihl analyzed the transcripts of 36 public hearings to determine the "viability" of hearings in transportation planning. Specifically, Kihl sought to examine how successful public hearings were in overcoming "barriers to communication", as gauged by the degree of citizen frustration.[22] Citizen frustration is a combined measure of perceived intensity of concerns and number of concerns expressed by citizens quoted in the transcripts.[23] The coders of the hearing transcripts indicated that highway officials-the primary communicators at the hearings-appeared receptive to citizen comments.[24] Officials who openly admitted to a lack of information, as opposed to evading difficult questions, were associated with more positive scores on the frustration index (i.e., a more positive view by meeting participants).[25]

The results from the same Kihl study also suggested that while participants who attended more than one public hearing may not feel less negative about the proposal, they did seem less frustrated.[26] Although the author points out that the data do not show causal linkages between hearing attendance and positive feelings about the proposed projects, the conclusion suggests that communication at public hearings can reduce frustration of participants and "promote

19 Richard L. Cole & David A. Caputo, *The Public Hearing as an Effective Citizen Participation Mechanism*, 78 **The Am. Political Sci. Rev.** 405, 412 (1984).

20 *Id.* at 415.

21 *Id.* at 406.

22 Kihl, *supra* note 16 at 197.

23 *Id.* at 189.

24 *Id.* at 197.

25 *Id.* at 198.

26 *Id.* at 199.

understanding, if not agreement," about the issues.[27] The results lack interviews with either hearing participants or organizers in order to validate whether their frustrations had, indeed, decreased following the hearings. The study's relatively optimistic findings for public hearings, therefore, must be viewed cautiously.

Current Study

This study sought to replicate earlier findings of public meetings about environmental risk in a similar, yet different setting.[28] Both studies concerned the controversial siting of a new county landfill. In the mid-1980's, Tompkins County in upstate New York began examining options for a potential to replace three county landfills whose operating permits had expired or would soon expire. After a review of 23 potential sites, the search was narrowed to six, and finally to one, known simply as DR-7, by a narrow vote of eight to seven.

After the selection had been narrowed to DR-7, the town officials filed a lawsuit against the county committee that had chosen the site, claiming that the procedure had been unfairly geared to selecting DR-7. Others opposed to the site claimed that the area was too wet to host a landfill, although the site did not qualify as a wetland under state specifications. Still others feared that the landfill would draw pests to the area. The county faced continued headaches over identifying the property owner of DR-7, since two firms claimed property rights.

Even before the selection of DR-7, public opposition to the landfill was formidable. The local newspaper reported that attendance at public meetings after the first announcement of the 23 sites grew "tremendously" and that protest against the sites was "vociferous".[29] These sentiments were voiced at the formal public hearings; the first attracted over 250 people and lasted over five hours.[30] One account of the public hearings read:[31]

27 *Id.*

28 McComas & Scherer, *supra* note 3.

29 Rees E. Warne, *On Beyond Hypothetical Compensation: An Exploration of Landfill Site Neighbors' Attitudes Regarding Host Community Benefit Options* (unpublished manuscript, Cornell University, 1994).

30 Kathy Hovis, *75 Attend Landfill Hearing Before Judge*, **The Ithaca Journal** December 14, 1989, at 3A.

31 Warne, *supra* note 29 at 99.

> [C]hildren spoke, adults cried, local artists displayed works meant to capture the unique natural beauty that was about to be destroyed, and residents of all stripes urged the county to protect its land, its water and its citizens.

After DR-7 was selected, the county held another public hearing. The day of the meeting, the local newspaper reported, "The not-in-my-backyard syndrome is alive and well...and its residents are expected to turn out in force at tonight's meeting."[32] That meeting attracted 75 participants who "came mostly to speak out against the site."[33]

In terms of public participation, the county generally appeared to rely on the public meetings or hearings. In addition to the mandated public hearings, the county also held at least five public information sessions prior to announcing the selection of DR-7.

In efforts to gain public acceptance for the landfill site, the county introduced the idea of host community benefits, subsequently discussed at several public meetings. In the spring of 1988, a public opinion survey was contracted to determine citizens' preferences among a range of benefits, as well as to gauge their level of concern about the landfill. In addition, the survey contained several questions about citizens' activities and communication behaviors related to the landfill siting. Although these questions were secondary to the county's primary objective of determining attitudes about host community benefits, these questions are central to the current study.

The overall research question this study sought to answer was whether citizens who attended the public meetings were representative of citizens not in attendance regarding their attitudes, communication behaviors, past experiences with landfills, faith in the county government, and demographic characteristics. Based on our earlier research about environmental controversies, we expected to find differences between these two groups. In particular, we hypothesized the following:

> H1: Citizens attending meetings will be angrier about the proposed landfill.
> H2: Citizens attending meetings will be more worried about the potential effects on their homes and properties.

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32 Kathy Hovis, *Landfill Site Opponents Vocal*, **The Ithaca Journal,** December 13, 1989, at 1A.

33 Hovis, *supra* note 30.

H3: Citizens attending the meetings will be more negative in general about the potential risks of landfills.
H4: Citizens attending the meetings will be more likely to talk about the proposed landfill with others.

Methods

As stated earlier, this study relies on secondary analysis of survey data obtained for an earlier field study on the landfill siting conducted by county representatives and faculty participants at Cornell University, including one of this study's co-authors. While the earlier study's purpose was gaining community input regarding a host community benefits program attached to the landfill, the current study focused on questions relating to citizens' attitudes and participation in the landfill siting process.

The survey's 33 questions, comprising 103 variables, covered a variety of topics relating to the proposed landfill, including respondents' degree of anger and worry, how bad they imagined the possible effects, their overall attitude toward landfills, how often they talked or attended a meeting about the landfill, whether they had ever lived near a landfill, preferences among an array of host community benefits, and various demographic information.

A copy of the questionnaire was mailed to property owners living within an approximate two-mile radius of the proposed site. Owners were identified through county tax assessment roles; those not listed as fully taxable were excluded, as were commercial properties. The 849 identified owners received up to three mailings, including an initial copy of the questionnaire, a reminder postcard, and a later survey if necessary. Ultimately, 560 owners responded, yielding a 66% response rate. Responses were analyzed using the Statistical Package for the Social Sciences.

For hypothesis testing, degrees of anger about the proposed landfill and worry about its effects on home and property values were measured using two questions. Responses to these questions ranged from "no opinion," "not" worried or angry, "somewhat" worried or angry, to "very" worried or angry.

Questions about specific effects of hosting a landfill were used to determine how concerned respondents were about potential "bad

effects" from this particular landfill. These questions included items about the possibilities of increased traffic, litter, smells, dust, noise, appearance, pests, pollution of wells or area creeks, stigma, etc. Responses ranged from "very bad," "somewhat bad," "not bad," to "unsure." In total, 13 items were summed to create an index to measure concern with higher scores indicating greater concern (Cronbach's alpha=.92).

General negativity toward landfills was determined using five questions with responses ranging from "strongly agree" to "strongly disagree." Questions included, "Landfills bring nothing but trouble to neighbors," "No matter how careful the design of a landfill it will still pollute sooner or later," and so forth. These questions were summed to create an index (alpha=.78) with higher scores indicate greater negativity.

Finally, "talking behavior" was measured by asking respondents to estimate how often they talked with other people about the landfill in the last month. Response categories ranged from "never," "not often," "often," to "very often."

Results

Those responding to the survey were evenly divided between those who attended meetings about the landfill (49.9%) and those who did not (50.1%). Table 1 shows a comparison of demographic characteristics between those respondents who attended the public meetings and those who did not. Between the two groups, no significant differences were found for age, years in the community, level of education, or income. Approximately 50% of those attending the meetings were under 45 years of age, as were about 50% of those not attending. There were more males than females in our sample, with 62% of those attending being male, and 57% of those not attending being male. More than 25% of both groups had received some college education, and the majority of both groups had income levels between $20,000 and $50,000.

However, those citizens who attended the meetings (67%) were more likely to have already lived near a landfill, which for a majority (59%) meant a former county landfill. Additionally, citizens who

attended the meetings were significantly less likely to agree that the county government studied the proposal enough and understood citizens' concerns.

Table 1
Selected Demographics

	Did not Attend (n=280)	*Attended (n=279)*
Age		
<45 Years	47%	49%
Gender		
Male	57%	62%
Education		
High School	29%	29%
Some College	25%	26%
College grad	37%	36%
Income		
<$20,000	12%	13%
$20,000 - 50,000	56%	57%
>$50,000	25%	26%
Years as resident		
10 or fewer	49%	48%
11 to 20	21%	28%
21 to 30	11%	11%
31 or more	19%	13%

To test the hypotheses, comparisons of mean scores using independent samples t-tests were used to detect differences between respondents who attended the meetings and those who did not. Table 2 lists the results, which in sum, support the hypotheses. Those who attended the meetings were significantly angrier about the proposed landfill than those who did not attend. Those who attended the meetings were also significantly more worried about the landfill's potential effects on their home and property values. They were also significantly more negative about the possible bad effects of this particular landfill, and they were significantly more negative in general about the possible risks of hosting a landfill. Finally, citizens who attended the meetings were significantly more likely to talk about the proposed landfill with others.

Table 2
Mean Differences Between Groups

	Did not Attend (n=218)		*Attended (n=232)*		
	M	*SD*	*M*	*SD*	*t*
Angry about Landfill Proposal[a]	3.06	.84	3.61	.65	-7.73*
Worried about effects on home and property values[a]	3.14	.77	3.59	.6	-7.03*
Negative about bad effects from this landfill[b]	28.8	8.44	32.71	6.81	-5.38*
Negative about landfills in general [c]	17.6	4.4	20.32	3.97	-6.88*
Talking to others[d]	1.36	.8	2.14	.72	-12.01*

Note: Listwise deletion of missing values. Equal variances not assumed.

* $p \leq .001$.

a Responses range from 0 to 4; higher scores indicate greater anger or worry.

b Thirteen-item index (alpha=.92) ranging from 4 to 52; higher scores indicate greater negativity.

c Five-item index (alpa=.78) ranging from 5 to 25; higher scores indicate greater negativity.

d Responses range from 0 (never) to 3 (very often).

Discussion

One of the primary threats to the validity of citizen participation is that the views of citizens who participate do not represent the views of citizens not participating.[34] Since most public participation programs tend to rely on self-selection for recruiting their citizen participants, this may serve to further exacerbate the possibility of sample bias. The results of this study found that respondents participating in public meetings were demographically representative of respondents not attending the meetings (see Table 1). Thus, in terms of our sample's demographics, citizens who attended meetings did indeed represent those who did not attend. Essentially, however, here is also where similarities between the two groups end.

34 Heberlein, *supra* note 6.

As Table 2 shows, differences between the groups included degrees of anger about the proposed landfill, worry about its effects on home and property values, expectations of more negative effects from this particular landfill, and general negativity towards landfills. Citizens who attended the meetings were also more likely to talk to others about the landfill. Thus, in terms of certain attitudes and communication behaviors, citizens who attended the public meetings did not represent citizens who did not attend. While these findings differ from those of Gundry and Heberlein, the differences may be attributable to the type of meetings studied.[35] Depending on the context, some public meetings may elicit more controversy or stronger opinions than others. Other factors that may contribute to the differences detected between the two groups include past experiences. Citizens attending the public meetings were more likely to have lived near a county landfill. Additionally, lack of confidence in the county's policy makers likely factored into the differences, as well. Citizens who attended meetings were less likely to believe the county had studied the site well enough and understood the citizens' concerns.

Conclusions

This study offers additional research on public meetings, which are arguably one of the most commonly used, yet infrequently studied, methods of citizen involvement. In doing so, however, this study raises perhaps more questions than it answers. First, this study documents the high degree of anger and worry among citizens most affected by a decision about a proposed landfill. It also shows that these citizens were also the most likely to talk to others about the landfill. Given that these citizens were the most negative, as well as the most talkative, the possibility that they amplified concerns among other citizens in the community about the potential risks of hosting a landfill bears further consideration and more systematic investigation in future research.

Second, considering the high degrees of anger, worry, and negativity found among meeting participants, the results may encourage risk managers to consider a variety of participation options, not just public meetings, to involve the public in the decision-making

35 Gundry & Heberlein, *supra* note 9.

process. Earlier, we questioned whether concerns about risk may be amplified if the process used to communicate risk leaves citizens feeling worse off than before the process began. If participants in the public meeting process view it as unfair, authoritarian, or closed to opposing viewpoints, relationships between risk managers and citizens may be damaged. For those charged with organizing public meetings and other processes of risk communication and public participation, the research may provide some empirical justification for emphasizing alternative processes of risk communication and citizen involvement in certain highly charged contexts.

Future avenues for research are also suggested, among them additional evaluations of public meetings from the participants' perspectives, as well as from the risk managers' or policy makers' perspectives. More research is also needed to investigate the impact of public meetings on the eventual decision about environmental risk. To provide a case in point, as well as a postscript to the study, the county in this study ultimately decided not to construct the DR-7 landfill. As it happened, scientists at the local university ran several additional tests that added further weight to local citizens' claims that the area was unsuitably wet for a landfill. Instead of choosing another site for a new county landfill, officials opted to transport waste to a neighboring county's landfill. Whether this policy decision reflected the belief that no other parcel of land in the county was suitable for a landfill, or whether it was due in part to a reticence to begin the controversial selection process again, bears some consideration, particularly in view of the negativity, anger, and worry found among those who participated in one aspect of the selection process, the public meetings.

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