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Insights and Applications

Participatory Democracy, Representative Democracy, and the Nature of Diffuse and Concentrated Interests: A Case Study of Public Involvement on a National Forest District

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To evaluate whether public involvement on a national forest district fairly represents the public's values, this article proposes four hypothesis tests. First, it is hypothesized that public-involvement programs operate according to a participatory democracy logic, in which broad cross sections of the public participate in public involvement opportunities. A second hypothesis is tested that public involvement reflects a representative democracy process in which interest groups participate yet represent the underlying distribution of issue interests of the public at large. Because the findings indicate that interest groups do outcompete the public in participation, two additional perspectives are entertained. A political economic perspective is considered that posits that the incentive structure characterizing different interests defines participation. This perspective is contrasted with a perspective that argues that environmental "elites" prevail in participation and in the process misrepresent the public's values. Tests are made to adjudicate between alternative hypotheses. The findings and their implications for democratic public involvement and decision making are considered.

Keywords diffuse and concentrated interests, environmental attitudes and elitism, participatory and representative democracy

Decisions about the environmental management of public resources is a topic of considerable national interest. Federal environmental polices instituted in the 1970s have fundamentally altered the opportunities for public participation in decision making in agencies such as the Forest Service, the Bureau of Land Management, and the U.S. Environmental Protection Agency (EPA). This has led to considerable academic attention to the structure of public involvement opportunities (Blahna and Yonts-Shepard 1989; Force and Williams 1989; Sirmon et al. 1993), the growing conflict between competing interests (Gericke et al. 1992; Gericke and Sullivan

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1994), and the need for environmental mediation and dispute resolution in environmental planning (Daniels et al. 1994; MacDonnell 1988; Manring 1993; Sample 1993). Yet given the substantial changes in the decision-making context, inadequate attention has been paid to the question of whether institutional changes have actually made the decision-making process more representative of public values.

This article considers four theoretical perspectives on whether public involvement fairly represents public values—two normative models making arguments about how publics *should be* involved in environmental decision making (i.e., the participatory democracy and representative democracy models) and two critical perspectives on who is most likely to be involved given the political and institutional frameworks in place (i.e., a model of diffuse and concentrated interests and a model of elite environmentalism). The findings indicate that critical political economic perspectives are important considerations for those attempting to make sense of society and natural resource relationships. In the following sections, the theoretical models are presented; study methods, hypotheses, and operationalization are described; and results and implications for representation of public values are explored.

Models of Democracy and Public Involvement

Participatory Democracy

Participatory democracy perspectives argue for the broad participation of the public in environmental and other forms of public decision making. Calls are made to democratize nature (cf. Fischer 1993; Mason 1997), to recreate civil society through grass-roots social movements and community action groups (Bush 1997; Kitschelt 1993; see also Woliver 1993), and to overhaul liberal representative democracy with a participatory democracy to prevent further erosion of civic-mindedness and community self-efficacy (Kline 1994; Knopp and Caldbeck 1990).

The primary objective is to involve broad cross sections of the American public in decision making to rebuild a sense of community and to restore a capacity for community self-efficacy among publics in those communities. At a structural level, however, participatory democracy is faced with several challenges. Critiques are often framed in terms of the relative strengths of the dominant alternative paradigm of public decision making, that is, representative democracy.

Representative Democracy

At least implicitly, the alternative representative democracy model often asserts that individual citizens do not have the time, knowledge, or interest to participate in civil society activities (cf. Moote and McClaran 1997; Pierce et al. 1992). Individual citizens, according to this perspective, tend to be less understanding of complex ecological issues, may have little time or motivation to learn the issues, and so may not be likely to understand how alternatives relate to their preferences compared to issue experts (cf. Heberlein 1976). In the face of these challenges, a representative democracy model suggests that individuals overcome intellectual, motivational, and time-related resource barriers by supporting interest groups, such that the distribution of groups in policy debates tends to fairly represent the actually underlying distribution of interest in a given time in society (Pierce et al. 1992). The principal claim of an interest group model lies theoretically in the assertion that it can achieve

representativeness more efficiently and without distortion through interest-group participation.

On the Nature of Diffuse and Concentrated Interests

Debates about whether interest groups, in turn, can be expected to efficiently represent the public's underlying values have been taken up by a variety of social scientists (cf. Gaventa 1980; Peltzman 1998; Schattschneider 1960; Stigler 1971; Olsen 1965; Wilson 1980; and others). As Putnam (1995) points out, the question of whether participation by interest groups can effectively represent the public interest has been assessed under a variety of theoretical rubrics: the logic of collective action, the tragedy of the commons, or the economics of regulation, also referred to as the study of the nature of diffuse and concentrated interests. Few applied studies, however, have addressed the relevance of such models to on-the-ground environmental decision-making practices (for an exception see Wienberg and Gould 1993).

One theoretical formulation that is particularly apt for an empirical study of national forest politics, the case at hand, is Wilson's (1980) theory of diffuse and concentrated interests. Wilson's (1980) discussion focuses primarily on whether interest groups share equal incentives for group formation around the public's interests. Wilson suggests not. According to his model, incentives can be "diffuse," in which case interest groups are likely to form only under restricted conditions. Or they can be "concentrated," in which case they are more strictly likely to form to pursue their interests.

Because national forest politics, the empirical case of study in this article, have been fundamentally grounded in disputes about the commercial exploitation of public lands where concentrated interests are likely to be "in play" and because they are also bound by disputes about environmental and aesthetic protection of the same forest lands, the model of diffuse and concentrated interests is a particularly apt model to test as an empirical predictor of public participation. Forestry-related commodity extraction activities, such as timber, mining, and grazing, are types of activities for which potential interests are likely to see increased profits (i.e., concentrated incentives), while the costs of those activities may be dispersed over the public owners of the national forests at large. The benefits from enforcing policies for environmental protection (e.g., habitat protection, soil conservation, watershed protection, etc.), on the other hand, are diffuse—that is, everybody benefits a little bit from environmental protection. As such, a model of public involvement that assesses the implications of interest group formation around diffuse and concentrated interests is the third model for empirical investigation in this case.

Pluralism by Design and Elite Environmentalism

It is relevant to note before proceeding that several institutional changes have affected the ways in which competing interest groups may "see" incentives to participate in the national forest politics. A trend in state policymaking since the 1970s has been argued to have leveled the playing field for the formation of diffuse environmental groups. This trend, which Hoberg (1992) calls "pluralism by design," has been argued to even the playing field for diffuse interests by shifting the types of legal and procedural resources at their disposal—particularly citizen standing to sue, rights of appeal, and judicial review and oversight of agency activities (see also Steel et al. 1996). This shift in the balance of power to environmental groups has

given rise to claims that, far from agency capture by concentrated interests, environmental groups have in fact been captured by environmental interests (in ways that distort the public interest). Thus, counterclaims of "environmental elitism" have been raised in such a way as to prompt empirical questions about whether increased participation of environmental movement interests in environmental politics reduces distortion or increases it. This study attempts to bring additional empirical evidence to bear on competing claims about public involvement outlined in this brief theoretical review.

Methods

The Case

The Wine Springs Creek watershed, in the Nantahala National Forest, has been declared an "ecosystem management" demonstration area. The Wine Springs Creek area is in Nantahala Township, in the westernmost portion of Macon County, North Carolina. Macon County is a rural county of roughly 330,000 acres that contains more than 150,000 acres of national forest land. The watershed comprises approximately 4500 acres of land in Macon County, slightly less than 3% of the national forest land area of the county, and not quite 1.5% of the total land area. In 1990, the population of this county numbered slightly less than 25,000.

The ecosystem management demonstration project activities included a set of regeneration harvests, with the harvested timber to be offered for commercial sale. The second proposed management action was a prescribed burn designed to mimic natural fires to recreate current ecosystem conditions. The burn area was proposed to cover approximately 500 acres. The third management action involved the addition of large woody debris in stream reaches to increase riparian habitat where it had been identified as lacking in this habitat component.

Forest Service personnel responsible for implementing public involvement informed "the public" of the management plans and solicited comments (as required by the National Environmental Policy Act (NEPA) of 1969). Thirty-seven members of the public were chosen from a master mailing list that contained groups of interested and affected parties, including those who made past inquiries, as well as those who had contractual obligations such as timber sales, mining contracts, and special-use permits. Forests are also encouraged to contact certain agencies (the NEPA identifies some "interested and affected" publics explicitly, e.g., federal agencies, state, local, and tribal governments, and "marginalized" groups, specified as women and minorities). In this case, the state of North Carolina had a list of employees it wanted reached on each project. The participation letter described the three management actions, provided background information on the project, and provided a map of the proposed treatments. The letter asked receiving groups to review the management plans and provide comments. Following this public-involvement phase, a follow-up survey was given to members of the projects' mailing list and to a sample of the general public. The results from these surveys were used to test the hypotheses regarding how well the public involvement models previously outlined in fact predict involvement.

Sampling

Eight hundred and thirty-five residential households in the rural communities surrounding the ecosystem demonstration area, Aquone and Franklin, in Nantahala

Township, North Carolina, were randomly selected to participate in a telephone survey. Telephone area codes and locally specific exchanges for the region were obtained from telephone directories. The remaining four digits were selected using the random-digit-dialing method. Subjects had to meet two criteria: age (18 years or older) and the individual living in the household with the most recent birthday. Four hundred and ninety-eight interviews were completed, 7 were partially completed, and 330 refused to participate, yielding a response rate of 60%.[1]

The participant sampling frame included the full list of individuals invited by the district to participate (i.e., the 37 participants originally sent informational mailings). Of the 37 participants, 31 completed the survey. Two nonrespondents had moved out of the area, and two others had never participated and questioned how they were included on the original mailing list. These four were removed from the sampling frame. The adjusted response rate yielded a 94% response rate for participants. While this is a robust response rate given the participant sampling frame, it cannot overcome the fact that the sample frame for participants has a small *n*. The problem of small sampling frame is particularly problematic when within-group differences in the participant sample are evaluated. Yet, while the sampling frame contains a low number of participants, it is important to note that this is not atypical for public involvement (Gundry and Herberlein 1984). Project-level involvement, which goes on any time on-the-ground management actions significantly affect the environment, is a regular part of "everyday" management on districts, yet it rarely engenders broad popular participation. This issue, in fact, heightens questions of whether participants do or do not represent the values of the public.

Hypotheses and Operationalization

The first hypothesis tested is that public involvement reflects a participatory democracy model. We compared the two samples (participants vs. public) on a variety of socioeconomic characteristics (i.e., general education, forestry education, occupation, income, gender, length of residence, and local land ownership). If the participatory democracy model holds, we expect the participant sample to reflect the socioeconomic characteristics of the general public.

In the second hypothesis, we test whether a representative democracy holds. Respondents were asked, "Which one of the following interests or organizations, if any, do you think *best* represents your views on how federal lands in this area should be managed?" If the representative democracy hypothesis holds, we expect the interest orientations of participants to compare favorably with the distribution of interest orientations of the general public.

The third hypothesis, that interest groups have different probabilities for participation based on the underlying nature of incentives (concentrated and diffuse) or whether elite environmental groups are unfairly outcompeting other interests, is tested by first evaluating the rates of interest group formation among participants. In particular, we focus on whether environmental and timber interests have different rates of interests group formation. Second, the question of whether environmental groups are misrepresenting the public's values is tested by comparing the management preferences of the public to those expressed by participants.

Samples were compared on a battery of 17 resource management preference items. Items were anchored by whether respondents would prefer "more," "less," or the "same" amount of management emphasis.[2] Items included preferences for an environmental protection orientation (environmental regulations, wilderness,

endangered species management, water quality), personal use orientation (recreation and game species management), and commercial use orientation (timber growing, clear-cutting, mining).

Results

The socioeconomic characteristics of the participants and the public are presented in Table 1. From a purely socioeconomic perspective, the participants, as a whole, are clearly drawn from a different population than the local public. Participants tended to have more general education, more formal education about forests, greater incomes, a greater percentage of them owned land adjacent to National Forests, and a greater percentage of them held occupations related to natural resources compared to the public.

The fact that participants varied socioeconomically from members of the general public suggests that the model does not conform to a populist or participatory democracy model, in which case one would expect few significant differences from the population at large. It also raises questions as to how representative the management preferences of participants might be. Before comparing management preferences, however, first the results of the other hypotheses are reported.

Table 2 shows the relative distribution of the public and participants by interest orientation. This table provides a test of the representative democracy hypothesis, that participants represent the issue interests of the public. Overall, the results show a significant difference (Fisher's exact test, $p = .00073$).

By subtracting the scores of the public from participants and ordering these differences in terms of their magnitude and direction, we find that the most overrepresented participants were state interests (+13), environmental interests (+11), and timber interests (+10), while the most underrepresented were hiking/other recreation (−18), the Forest Service (−13), and fish and wildlife (−2) (see "Magnitude of Difference" column in Table 2). With the exception of fish and wildlife groups, which appear to compare favorably, we find significant divergences in the publicly defined and participant-defined distribution of interests, suggesting that a represen-

TABLE 1 Socioeconomic Characteristics of Wine Springs Creek Community Members and Project Public Involvement Participants

	Community members	Participants
Job related to natural resources	25%	70%
Own land adjacent to NF	16%	29%
Year-round residence	98%	96%
	Modal Categories	
Highest level of education	High school	College
Previous education about forestry	Moderate /not formal	Lots /not formal
Income	$25–34,999	$45–54,999
Gender	Female	Male
Years in country	1–10 years	30–59 years

Note. NF, national forest.

TABLE 2 Percent of Respondents by Natural Resource Interest Orientation: Wine Springs Creek Community Members and Participants

"Group which best represents my interests"	Community members ($n = 311$)	Participants ($n = 26$)	Magnitude of difference[a]
State agency	02	15	+13
Environmental preservation	20	31	+11
Timber	05	15	+10
Other	03	04	+01
Fish/wildlife	29	27	−02
None	03	00	−03
U.S. Forest Service	17	04	−13
Hiking/recreation	22	04	−18

[a] Indicates the difference between column 1 and column 2: +, the community's interest orientation was overrepresented by participants; −, the community's interest orientation was underrepresented by participants.

Note. Fisher's exact test ($p = .000735$).

tative democracy model (i.e., that participants would reflect the interest of the public) does not hold.

Table 3 tests the hypothesis that interest-group formation across interests follows a model of diffuse versus concentrated interests. This table suffers from the problem of small sampling frame because it is a within-group comparison of participants ($n = 24$). As such, the results must be viewed as only suggestive. Both timber and environmentally oriented participants, by and large, report representing an interest group when participating. Three-fourths of participants with timber-oriented interests reported representing an organized timber interest group (75%). Less than two-thirds of environmentally oriented participants reported representing an organized environmental interest group (63%). Fifty percent of the fishing and hunting and 50% of hiking/other recreation interests reported representing an

TABLE 3 Percent of Wine Springs Creek Participants Formally Representing a Natural-Resource-Related Interest Group ($n = 24$)

"Group which best represents my interests"	Interest-group formation (percent of respondents formally representing interest group when participating)
Timber	75
Environmental preservation	63
Fish/wildlife	50
Hiking/recreation	50

Note. Fisher's exact test ($p = .815$).

TABLE 4 Wine Springs Creek Community Members' and Participants' Preferences for Protection and Use (Personal and Commercial) Values by Modal Category

	Community members	Participants	*p* Value
Protection values			
Wilderness preservation	More	More	.00[a]
Water-quality improvement	More	More	.84[b]
Endangered-species management	More	More	.40
Old-growth preservation	More	More	.51
Protection of cultural/heritage sites	More	More	.00[a]
Environmental regulations	More	More	.60
Use values			
Personal:			
Recreation development	More	More	.82
Game-species management	More	More	.05[a]
Commercial:			
Build roads	Less	Less	.13
Clear-cutting	Less	Less	.088[a,b]
Mining	Less	Less	.82
Fertilizers/herbicides/ pesticides	Less	Less	.60
Grow commercial timber	Same	More	.80
Federal ownership of timberland	Same	More	.01[a]
Other values			
Citizen involvement	More	More	.02[a]
Environmental education	More	More	.32[b]
Tourism promotion	Less	Same	.14

Note. Test statistics based on chi-square test of differences in proportions except where low cell counts indicated replacement by comparable Fisher's exact test.

[a] Significant difference in proportions of community members and participants (α at .05 level). Some modal categories are the same but the differences in test of proportions are significant.

[b] Fisher's exact test used.

interest group. These observed distributions suggest disproportionate rates of within-group interest-group formation; however, the differences do not reach statistical significance (Fisher's exact test, $p = .815$).

While the results just reported are limited by the small sampling frame, the following results, which bear on the question of how well participants reflected the public, are derived from the more robust full sample.

Comparing Participant and Public Preferences for Resource Management

Table 4 clearly illustrates that preferences of participants, taken as a group, broadly reflect the public's values. Thirteen of the 17 management preferences were modally identical across the samples.[3] Participants and the public preferred "more" of each protection value (wilderness preservation, water-quality improvements, endangered-species habitat management, old-growth preservation, protection of cultural/heritage sites, and environmental regulations). Participants and the public also wanted "more" of the "personal use" values—recreation development and game-species management. They wanted "less" of each commercial use value (road building, clear-cutting, mining, and use of fertilizers/herbicides/pesticides)—with the exceptions of commercial timber growth, of which participants preferred "more" while the public wanted the "same" amount, and federal ownership of timberland, of which the participants wanted "more" while the public preferred the "same" amount. Other "outreach" values, the public and participants generally agreed on; the participants and public both preferred "more" citizen involvement and environmental education, while the participants wanted the "same" amount of tourism promotion when the public wanted "less" of it.

Discussion

In this article, several hypotheses were tested concerning whether public involvement processes fairly represent the public's values. When we proposed that public involvement programs operate according to a participatory democracy logic, we found the socioeconomic characteristics of participants compared to the local public were clearly different. We reject the participatory democracy theoretical model as an adequate empirical predictor of public involvement. This raises substantial and important questions about how public involvement programs operate, that is, who brings influence to bear on national forest policies.

To further explore this question, we entertained the standard political science notion that issues that have sufficient public support would generate interest groups who would represent their preferences at the participation level. We found significant differences, however, between the proportions of different interest orientations expressed by participants compared to the public. State, environmental, and timber interests were overrepresented. Yet how do we explain these findings? To do so empirically, we invoked and evaluated two theoretical models addressing the likelihood of interest group formation and influence.

The theory of diffuse and concentrated benefits critiques the standard representative democracy model by arguing that different groups in policy disputes have different incentives to participate defined by the nature of the very benefits they pursue—concentrated or diffuse. Theoretically, however, diffuse interests face greater obstacles in influencing policy because they must mobilize a public that has fewer selective benefits to participate, implying that diffuse groups are relatively disadvantaged in bringing diffuse values to bear on the policy process. Yet we found that diffuse interests outnumbered concentrated interests.

While critics have argued that institutional changes arising in the recent era of environmental legislation have resulted in the distortion of public values, the strong representation of environmental groups in this case appears to have created a better reflection of public values. The result here has been to increase the representation of public values in federal decision making not to further distort the public's interest.

These findings are important because previous work has suggested that the rural population is more traditional, that is, would, given the chance reject urban environmentalism. In contrast, we found in this case of public involvement on a relatively small rural area of the Nantahala National Forest, a public involvement process dominated by environmental interests supported the value structure of the public fairly well.

In summary, it appears that the overrepresentation of environmental interests can be explained by the hypothesis that diffuse interests have gained substantial victories in the institutional sphere, making the success of diffuse environmental interests much more likely. If public policymaking has leveled the field for diffuse environmental interests, the leveling of the playing field appears to have the effect of well representing public interests.

Critical perspectives developed in this article and across social sciences literature provide a sensitivity to the structured mediation and attainment of populist and pluralist goals. To the extent that participation in decision making is conditioned by unbalanced incentives, neither the participatory nor representative democracy models can succeed without overcoming structural barriers to participation. More theoretically, those concerned with more parsimoniously theorizing why outcomes do not always reflect popular interests need to bear in mind the structural incentives including those characterized by the economics of incentives, as discussed by Wilson, and those incentives provided by the state policy prescriptions. It appears that when popular sentiment is underpinned by structural reforms that diffuse interests distributions are successfully expressed. This argues for a robust state involvement in support of diffuse interests, including public health, consumer protection, and, importantly, environmental protection.

Notes

1. Response bias (on the community sample) was investigated on gender, education, and income by comparing the community sample to 1990 census estimates for the community at large. The same was found to be representative on gender (sample 54% female, census 51% female), and education (sample 32% high school educated, census 31% high school educated—modal level) but not for income. The income of the sample reflected higher incomes than the community at large (sample modal category 27% $25,000–34,599 household income, census 20% $25,000–34,599 household income).

2. Respondents preferring "more" emphasis on a given item were assigned a value of 3, the "same" a value of 2, and "less" a value of 1. Differences in management preferences across samples were evaluated using a chi test of difference on the sample distributions. Tests of difference in distributions were used rather than in means, because the narrow range of variation, small sample size (of participants), and scoring procedures meant that a mean response of 2 could be arrived at in a variety of ways that would effectively mask the variations of interest in the comparison. For instance, if 30% of participants preferred "more," 30% wanted "less," and 30% wanted the "same" emphasis on clear-cutting, while half of the public preferred less clear-cutting and half preferred more clear-cutting, the means of the distribution would be the same, while the underlying distributions clearly would be different. A test of the full distribution eliminates this bias.

3. Of 17 resource management emphases, participants and the public disagreed modally on 3, but statistically on 6. Modal differences, as the table shows, occurred for federal ownership of forest land, growing commercial timber, and cultural and heritage sites protection. Of the remaining significant differences, participants and the public chose the same modal category, but they differed statistically in terms of the distribution of preference responses. Participants and the public both wanted "less" clear-cutting, "more" wilderness preservation, and

"more" citizen involvement, but a greater proportion of the public favored wilderness preservation (participants, 40%; public, 72%) and citizen involvement (participants, 52%; public, 76%) while opposing clear-cutting (participants, 54%; public, 79%) compared to participants.

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