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Stephen Zavestoski
University of San Francisco

Stuart W. Shulman
University of Massachusetts - Amherst, stu@polsci.umass.edu

David Schlosberg
Northern Arizona University

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Democracy and the Environment on the Internet

Electronic Citizen Participation in Regulatory Rule Making

Stephen Zavestoski
University of San Francisco
Stuart Shulman
University of Pittsburgh
David Schlosberg
Northern Arizona University

We hypothesize that recent uses of the Internet as a public-participation mechanism in the United States fail to overcome the adversarial culture that characterizes the American regulatory process. Although the Internet has the potential to facilitate deliberative processes that could result in more widespread public involvement, greater transparency in government processes, and a more satisfied citizenry, we argue that efforts to implement Internet-based public participation have overlaid existing problematic government processes without fully harnessing the transformative power of information technologies. Public comments submitted in two United States Department of Agriculture (USDA) rule-making processes—the National Organic Program's organic standard and the Forest Service's Roadless Area Conservation Rule—compose our data. We conclude that the Internet provides an arena for playing out three types of conflicts that have long plagued environmental decision-making processes: conflicts over trust of federal agencies, the use of science, and the role of public values.

Keywords: *public participation; deliberation; Internet; rule making; environmental policy*

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The use of the Internet in the United States to solicit and accept public comments in the regulatory rule-making process has spurred important debate about the Internet's contribution to the democratization of environmental decision making (Zavestoski and Shulman 2002). We use two instances of what is coming to be known as eRulemaking—the United States Department of Agriculture (USDA) National Organic Program's 1997 organic labeling rule and the United States Forest Service's 2000 proposed Roadless Area Conservation Rule—to test the following research question: Does use of the Internet as a public participation mechanism temper the conflict and controversy characteristic of environmental regulatory policy making? Central to this question is whether the Web can provide an improved arena for democratic deliberation, allowing for difference and contention among citizen positions while leading to a workable consensus. This article investigates the question by analyzing citizen comments submitted during both rule-making processes.

There are numerous models of democracy where broader public inclusion and participation are not required. Deliberation and discourse studies, however, have been central to democratic theory over the past decade and a half (Dryzek 2000). In addition to this, we focus on deliberation for three key reasons. First, the expansion of participation and discourse on federal rules underpinned the intent of the public-comment process codified in the Administrative Procedures Act (Kerwin 1999). Second, agency officials have stated their intent to broaden public participation in both developing and legitimizing rules and the rule-making process. Third and most important, the ecological-symbolic perspective that we use draws attention to the ways in which meanings are constructed through democratic engagement. Democratic discourse is an ideal way for citizens to come to understand the positions and frameworks of others; in this way, ecological symbolism and deliberative democracy are intertwined. This relationship, we argue, may help surmount key problems in the existing adversarial policy process. To date, we have found that unreflexive, nondeliberative use of the Internet as a public participation mechanism reproduces rather than mitigates the same debates and conflicts that make environmental decision making so contentious.

We use two cases, each with distinct processes and outcomes, to arrive at this conclusion. The Organic Rule was finalized in 2000, and as of 2002, certified organic producers have been using the USDA's organic label. The Roadless Rule was finalized in 2001 but has since been bogged down by legal challenges and attempts by the Forest Service, under a new administration, to rewrite the rule. In both cases, the public was permitted to participate in the formal notice-and-comment process via the Internet. Besides their

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divergent outcomes, the two cases have one other important difference. While the USDA posted all public comments to its Web site, utilizing the Internet's potential to facilitate dialogue, the Forest Service permitted electronically submitted comments but offered citizens no Web access to other comments. This closed, one-way submission process stands in contrast to the open and two-way communication facilitated during the Organic Rule.

Overview of the National Organic Program

As a result of the Administrative Procedures Act of 1946, federal agencies in the United States are required to provide opportunities for the public to comment on proposed rule making. This requirement traditionally has been fulfilled through public hearings and the opportunity to mail, or more recently, fax one's comments. To read the comments of others, one historically has had to visit the docket room of an agency's headquarters in Washington, D.C. This changed in 1997 when the USDA's National Organic Program created a Web site dedicated to the collection and dissemination of public comment on its proposed organic definition—one of the first Web-based processes designed to meet an agency's public-comment obligation. This new form of access and comment was widely considered quite successful, especially since many in the organic farming community and broader public believed that corporate interests had shaped the proposed organic definition (Shulman 2003). In particular, the inclusion in the organic definition of genetically modified organisms, irradiated food, and food grown using biosolids (the Big Three) incited controversy and provoked levels of public participation unprecedented in agency, and perhaps federal government, history at that time (Julian 1998). The more than 275,000 comments submitted in the first round surely surpassed the expectations of the original sponsors of the Administrative Procedures Act, who wished to institutionalize public involvement in the regulatory rule-making process, and the regulators at the USDA who set up the Web site.

Despite agency and industry claims that an absence of scientific evidence demonstrating the harm of the Big Three justified their inclusion under the organic label, vocal members of the organics constituency asserted unequivocally that these practices were not part of what they considered organic agriculture. In challenging the proposed industry-friendly definition of *organic*, participants in the debate struck at a core dilemma of environmental management—what role do social values and scientific understanding play in determining the relationship of humans to the environment? As the case

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played out, it may be seen as one of public values' winning out over industry use of science; at the very least, it appears to represent a case of government responsiveness to public values (Shulman 2003).

In this instance, the opportunity for Web-based public involvement resulted in atypical deliberation and discourse, unheard of in the one-way communication characteristic of mailed or faxed comments. Through the Web forum, participants began to leave comments not just on the proposed rule but also on other peoples' comments and interpretations. Whether by accident or design, the National Organic Program provided a discursively democratic platform where diverse positions were aired and engaged, albeit in a limited and unstructured manner.

As a result of the unprecedented public participation at this stage of the process, Agriculture Secretary Dan Glickman announced in 1998 that fundamental changes would be made in the proposed rule (USDA 1998). On 7 March 2000, Secretary Glickman called for a second round of public comment on a revised rule. The previously mentioned Big Three provisions were almost entirely removed from the revised rule. An additional forty thousand comments were submitted that were found to be generally favorable. The USDA accepted the revised rule, and on 21 October 2002, organic producers certified by a USDA-approved certifying organization began using the USDA organic seal.

Overview of the Forest Service Roadless Area Conservation Ruling

Of all the federal agencies responsible for managing natural resources in the United States, the Forest Service has the most storied, and some argue, troubled past. It has been suggested it would be impossible for the Forest Service, regardless of its process of public participation, to make rules that are not highly controversial regulating the use of national forests (Behan 2001). The Roadless Area Conservation Rule was no exception. The ruling originated in January 1998, when then forest-service chief Mike Dombeck proposed a temporary suspension of road construction and reconstruction in most inventoried roadless areas and other adjacent unroaded areas.[1] The decision was motivated in part by budget shortfalls that had resulted in an $8.4 billion backlog of maintenance on forest roads. Following initial public participation (in which one hundred nineteen thousand comments were received), an interim rule was issued in February 1999 that suspended road construction and reconstruction in roadless areas until August 2000. In

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the interim, a long-term forest transportation policy was developed. During the public comment period for the interim rule, many participants expressed a need for a plan that would permanently protect roadless areas.

The Forest Service issued a proposed rule and draft environmental impact statement in May 2000. Public comment was accepted between 19 May and 17 July 2000. During this time, the Forest Service posted the proposed rule, the considered alternatives, background information, and a schedule of public meetings on its Roadless Area Conservation Web site (roadless.fs.fed.us). Four hundred thirty public meetings followed; in 200 of those, oral and written comments were collected (the other 230 were for information sharing only). More than twenty-three thousand people attended these meetings. The Forest Service also received comments through traditional mail, e-mail, and by fax. Citizens and organizations submitted more than one million postcards and other form letters, approximately sixty thousand original letters, ninety thousand e-mails, and several thousand faxes. Unlike the National Organic Program, comments went in one direction only; from citizens to the agency. Citizens could not read others' comments nor could they engage one another.[2]

The Forest Service's Content Analysis Team (CAT) analyzed the more than one million comments received. The CAT's report makes it clear that its analysis "makes no attempt to treat input as if it were a vote. In no way do the results of the content analysis attempt to sway decision makers toward the will of any identifiable majority" (CAT 2000, viii). The team goes on to admit that of the 1.2 million responses analyzed, very few respondents support the actual proposal at all. Those who support protection of roadless areas felt the rule did not go far enough, and those who felt existing protection was adequate felt it went too far. As the CAT explains, these two camps held competing sets of values and viewpoints:

> "Those who favor the proposed rule and those who oppose it fall roughly into two camps in terms of background and way of life, in terms of how they see the forest, and in terms of how they see the role of government." (2000, ix)

Despite irreconcilable differences between the two types of citizen participants, the Forest Service celebrated its extensive public-involvement process as a success. In a letter released on 5 January 2001, one week prior to official publication of the final ruling, former forest chief Mike Dombeck stated:

> Today, we conclude a public process that is based on the direct input of more than 1.5 million people—but in a larger sense reflects the views of tens of

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> millions of other Americans. The collective will of the American people has driven our decision to protect roadless areas. The decision is based on sound science and more than a year of analysis by some of the foremost researchers in their fields. But our decision also makes plain common sense. (Dombeck 2001)

Apparently the decision did not make plain common sense to a number of people. Even though newly appointed agriculture secretary Anne Veneman and forest chief Dale Bosworth issued statements of support for the ruling, they also promised to make amendments. Rather than deal with a growing number of court challenges to the rule, the Forest Service in 2004 proposed a new rule that would allow states on an individual basis to opt out of the original roadless area conservation plan. This new proposed rule, which has raised protests from a wide range of environmental and recreational forest-user organizations, received more than three hundred thousand comments before its initial sixty-day comment period was extended for sixty more days.

The Ecological-Symbolic Perspective

Kroll-Smith and Couch's (1991) ecological-symbolic perspective helps shed light on the sources of disagreements on environmental management. The ecological-symbolic perspective bridges a realist understanding of the biosphere with the social-constructivist view that people attach meanings to objects and then react toward them as if they are real. From the ecological-symbolic perspective, humans socially construct the meanings attached to environmental phenomena, but these meanings are also subject to very real biophysical constraints. Kroll-Smith and Couch use their perspective to examine community responses to environmental hazards. Although threats of environmental hazards are typically real, how a community responds depends on the way it perceives the threat (also see Tesh 2000; O'Brien 2002).

The ecological-symbolic perspective fits the case of federal environmental policy and the practice of rule making. Rather than exchanges between local communities and local environments, federal rule making involves exchanges between larger and more diverse communities (e.g., regions, states, or the nation) and what often are more distant and dispersed environments (e.g., national forests, farmlands, oceans, or the atmosphere). Public participation in the rule-making process, in theory, is one approach to introducing into the decision-making process both lay and scientific symbolic perspectives regarding nature. Scientists and other experts attempt to

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represent ecological realities through their technologies and methodologies. Laypeople, like scientists, often attempt to offer their own accounts of ecological realities, but unlike scientists, they also assert symbolic understandings of reality derived from cultural beliefs and values. But scientists and laypeople are not the only actors in the symbolic construction of ecological realities. Governments, corporations, and other social actors also engage in the process. Regardless of the players, decisions and policies are made on the basis of a negotiated reality—a reality that in the modern context is more often than not dominated by scientific perspectives, or at least, perspectives that use scientific justifications.

Lay perspectives challenge the sound science approach to environmental policy making because they often rely on firsthand experiences in the ecological realities being negotiated. The experiential knowledge of the lay participant is often inconsistent with scientific understandings of ecosystems.[3] Such inconsistencies create a management problem. If those making the final decision solicit lay perspectives only to dismiss them in favor of scientific accounts of ecological reality, public trust in government generally declines, and the likelihood of future participation diminishes. Another approach is to manipulate lay accounts of ecological reality so they appear consistent with scientific accounts. Dismissal and manipulation of lay accounts rely on the use of authority and power to assert one version of reality over another. It is only when lay perspectives are incorporated into decision-making processes that a genuinely democratic negotiation over how to define an ecological reality takes place. Incorporating lay perspectives into decision-making processes requires the provision of sufficient opportunities for lay voices to be heard and respected.

Obstacles to Public Participation

The ecological-symbolic perspective leads to the assumption that public involvement in environmental decision making is necessary and desirable. Public participation foregrounds the fact that environmental decision making entails multiple stakeholders negotiating an ecological reality. Conflicting scientific perspectives, government agendas, economic interests, and citizen preferences are forced to confront and engage one another. In addition, public involvement can expose the use and misuse of power to privilege certain discourses and symbols. The outcomes seldom leave all parties content, but a legitimate decision-making process with meaningful opportunities for all relevant stakeholders to participate at least offers the potential

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for a wider variety of outcomes than processes that are limited. In other words, adequate public involvement enables the negotiation of the ecological-symbolic reality being contested.

Bringing to attention the notion that environmental decision making is always a matter of negotiating an ecological reality puts lay perspectives into a different relationship with scientific authority. This transformation of an imbalanced power relationship is significant, especially in the adversarial style of American policy making (Renn 1998), which is well known for the level of contention and confrontation with respect to the use of science. Policy makers use formal scientific evidence in support of their policy decisions and denigrate the supposed faulty, insufficient, or biased use of scientific knowledge on the part of their challengers. This science-based pretext for environmental decision making introduces two types of obstacles to citizen involvement. First, there are the usual structural features limiting public participation, including lack of opportunities to participate and to participate authentically (with the hope of impacting decisions). Second, there are obstacles to the use of lay perspectives because expert scientific knowledge and jargon are privileged.

Both obstacles lead to a lack of public trust in agencies and to a belief that the public participation process is co-opted for preexisting political purposes. These outcomes can be seen as attributes of Beck's risk society (1992), in which unprecedented environmental and other public health hazards cause decreasing public trust in the state's ability to guarantee the welfare of its subjects. But Beck also later hypothesized a form of subpolitics in which citizens push for greater democratic participation in the decisions traditionally made by bureaucrats and technocrats. The erosion of trust is problematic for a variety of reasons, not least of which is that participants in any democratic deliberation, online or otherwise, must trust that the forum is free from coercion and that their participation has the potential to affect the outcome. The two obstacles to public involvement that we identify suggest that these conditions are not being met—either opportunities to participate are not provided, or more commonly, when opportunities are provided, they exclude lay voices by using technical scientific criteria for decision making.

Until recently, a fundamental obstacle to public participation has been the absence, because of institutional procedures and practices, of opportunities to participate. McAvoy's (1994 **1998 IN REFS**) research, for example, finds that in the state of Minnesota's attempt to site a hazardous waste facility, elite policy networks shaped the decision-making process, and concerned citizens lacking network ties or necessary resources had few opportunities

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to influence the process. Also until recently, government officials in the United States have relied heavily on the public hearing. Kemmis criticizes this approach for inviting "people to assume unencumbered stances—to shed any responsibility for the decision or for hearing or responding to one another" (1990, 59). Kemmis also sees this model as dismissive of values, which are assumed to be held privately and are seen as inappropriate in discussions of the public good.

Other researchers see the public hearing as an instance of systematically distorted communication (Keohane 1998), far from the type of ideal democratic speech described by many deliberative democratic theorists (for example, Dryzek 2000). Activists tend to agree and complain about the "step up to the microphone and have your say in less than fifteen minutes" approach to public participation; they demand more open deliberation as part of a process where what they say actually counts (Cole and Foster 2001).

The citizen advisory board, another approach commonly used, also receives criticism. Lowry (1998), for example, finds fault in the Environmental Protection Agency and Department of Energy attempts to use citizen advisory boards at hazardous-waste cleanup sites. He argues that they do not address the underlying issues of "not in my back yard" politics and the inequitable distribution of toxics. Similarly, Szasz and Meuser's (1997) study of the United States Department of Defense's use of restoration advisory boards finds that the board members did not adequately represent the community and that the military co-opted the process of citizen participation.

Even when structural opportunities for public involvement exist, the emphasis on science-based decision making often discourages the expression of lay perspectives. Many have criticized the privileging of scientific over lay perspectives in environmental decision making (Short 1999; Wynne 1996; O'Brien 2002). By couching debates in scientific and technical terms, scientists and government officials often engender mistrust (Szasz and Meuser 1997). On the other hand, by allowing public participation processes to shape a nonscientific discourse, government officials must deal with the inclusion of value-based criteria in decision-making processes. McAvoy (1998) suggests that often, the sources of disagreement between citizens and policy makers reside in fundamental differences in the willingness to make value trade-offs rather than in technical issues.

Given these two limitations and the understanding that public involvement is crucial to the process of negotiating ecological realities, we examine the impact of Web-based public participation platforms. The use of the Internet as a forum for public dialogue could broaden the range of participants in the negotiation of symbolic accounts of ecological realities as well

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as reveal the uses of power and authority where they exist. One school of thought holds that Web-based participation can enhance deliberation, facilitate the transformation of preferences and inclusion of difference, promote respect for a variety of positions, and introduce the public good into public dialogues in addition to the traditional expression of individual and group interests (Noveck 2004; Beierle 2003; Brandon and Carlitz 2002). Another school warns of the danger of assuming, without some agreed-on metric, that a technological innovation like the Internet can enhance democracy (Shulman 2003; Coglianese 2003).[4]

Our position is that the structural and procedural obstacles discussed above point to serious problems in the way public-involvement processes are carried out and that only a reflexive application of the Internet to public participation processes can move beyond these obstacles. The research we discuss next investigates whether participating via the Internet results in discourse that moves beyond the distrust of government, appeals to scientific evidence as a source of legitimacy, and accepts the assertion of personal values as a basis for one's position.

Methodology

This study examines the use of symbolic perspectives in the comments of citizens—how they are expressed, how citizens represent their own and others' perspectives, and how citizens understand the position of the agencies involved. The rules we examine have comparatively high numbers of public comments, illustrating the salience of environmental issues and the public desire for reflexive input. We do not directly measure the amount of discourse occurring in the current study (that is part of another project), but we do explore the nature of the discourse offered by participating citizens.

We rely on a combination of official agency documents, Web sites, and the rulings themselves to examine the interaction of symbolic perspectives in the public-comment process. In analyzing citizen response to the rulings, we use the actual comments, which are part of the public record, submitted to the respective agencies. Table 1 summarizes the comments on the two rulings. Our samples, also described in Table 1, were drawn from subsets of the total number of comments submitted on the two rules. The USDA's National Organic Program provided us with 21,000 electronically submitted comments, from which we randomly sampled 525. Sixteen were either unreadable or blank files, leaving us with a sample size of 509. In the case of the roadless ruling comments, the Forest Service's CAT provided us with

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Table 1
Number and Type of Public Comments during Organic Rule and Forest Service Roadless Rule Public Comment Periods

Comment Format	Number of Comments			
	Organic Rule†		Roadless Rule	
Original comments	Population of Comments	Sample of Comments	Population of Comments	Sample of Comments
Traditional (e.g., letters, faxes, public-hearing testimony)	84,000		22,954	50 (letters) 50 (fax)
Electronic (e.g., e-mails, Web-based forms)	21,000	509	11,423	100
*Form letter comments**				
Identical form letters	170,000		1,094,965	
Form letter variations (e.g., unique text added)	(not tracked)		26,966	100
Total all types of comments	275,000	509	1,156,308	300

†Figures for the National Organic Program are estimates. The National Organic Program never created a list of every catalogued comment, and repeated attempts to get access to the archived comments have so far failed.
*Neither the National Organic Program nor the Forest Service specified the electronic versus traditional breakdown for the form letters. We suspect these were largely traditional, since most advocacy groups have only recently developed Internet-based systems for the production and delivery of form letters.

a random sample of approximately ten thousand comments. From this sample we systematically subsampled 100 e-mailed comments, fifty faxes, fifty letters, and 100 form letters that included a space for additional comments by the sender.

Using NVivo, a qualitative-data analysis software program, we identified and coded all 509 organic-ruling comments. The roadless comments, because they were received as PDF files unreadable by optical character recognition software, were read and coded by hand. We attempted to avoid the tendency to quantify the results of qualitative research by relying on NVivo to help identify the most salient themes and then allowing the voices of contributors to the rule makings to speak for themselves. All excerpts come from citizen comments included in our sample or the Forest Service's report of its analysis of the full set of public comments.

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The Internet and Public Participation: Deliberative Democracy or Controversy Incubator? Both the National Organic Program and the Forest Service introduced their Internet-based public participation mechanisms into the traditional rule-making process. For example, both wrote highly technical rules backed by sophisticated scientific evidence. This set up a common contentious relationship that compelled citizens to counter in three primary ways: (1) by questioning the authority of the agencies by pointing to the loss of public faith and trust in the agencies' intentions, (2) by presenting alternative science or pointing to the lack of scientific evidence as justifications for alternative understandings of the environment, and (3) by asserting personal values as valid bases for alternative courses of action. These citizen-argument strategies were identified through our content analysis of public comments on the two rules. Our approach to analyzing the comments in terms of the underlying styles or approaches to citizen arguments differs from federal agencies that analyze the content of public comments to find red flags, such as threats of legal action, or to find new information that can be brought to bear on scientific or economic analyses.

Citizen Responses to the Proposed Rules

The Role of Trust

Although the National Organic Program reported that its acceptance of electronic comments on the organic ruling resulted in enhanced trust from citizens, many of the comments expressed skepticism and disbelief regarding the original proposal. As the following excerpts from commenters demonstrate, many argued that the USDA's attempt to include the Big Three in its definition would undermine an already eroded trust in the government:

> The proposed rules that would allow changes in the definition of organic foods will not benefit the public and would be a step backward in food safety. The beneficiaries would be the producers, not the public . . . Your proposal does not promote trust in government as the instrument of the people, but does indicate the power of lobbies for special interests.
>
> ALLOW US THE CHOICE OF TRUE ORGANIC FOODS. DON'T GIVE US THE SAME OLD CRAP AND CALL IT ORGANIC. The attempt sheds further distrust on the big-brother government, proving once again that the government of the people sleeps in the beds with big-business interests.

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> [L]abeling foods as organic when they are not is dishonest and supplies the general population with one more reason to distrust (and soon disown) our government.

> Please prove to us that you aren't just a tool for agribusiness, biotech, and chemical companies and the giant supermarket chains . . . Help us to believe in and trust our government!! Thank you!!!

> We know better now than trust our government . . . We watched you mutate the true meaning of organic farming into a travesty! We can't trust our government when it stops listening to us.

Distrust also extended to the corporations in whose interest it is to produce scientific evidence suggesting the Big Three are safe for consumers. A consumer in Colorado had this to say: "Please begin labeling products that contain genetically modified organisms. As a consumer, I have a right to know what is in the food that I eat. I don't trust the corporate-sponsored research that defends genetic modification." And an Indiana man asked the USDA to:

> Rebuild the people's TRUST in our government and ensure a safe source of food for all our people! The GMO **PLS SPELL OUT** situation and big-corporate influence in our food should not be allowed! . . . It is up to YOU and our elected officials to do what is right and wanted by the American people who elected them. Thank You!

An organic accrediting agency, in its statement against the ruling, captured the sense of corporate influence over government policy:

> A compromised standard, one that yields to pressures from commercial interests and waters down the meaning of organic so as to include precisely the elements the organic consumer is trying to avoid, renders certification meaningless and vacates trust in the USDA as a guardian of the people's well-being.

Many other comments, obviously familiar with the philosophy and practices of the organic industry, explained that there already existed a definition of organic that they could trust, one that had been developed by various accrediting agencies and organizations. Accordingly, one person wrote:

> The organic label on food in a store whose reputation I trust has been, for me, a way to identify food that has the least chance of being treated with substances that may be harmful to me or the environment. I want to be able to

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> continue to trust the organic label. That label cannot include food that has been irradiated or that is a product of genetic engineering.

Trust was an even more prominent topic in the Roadless Rule, though in both cases it tended to be used primarily by those objecting to the proposed rulings. Although the CAT did not quantify responses, it did report that "throughout the hundreds of thousands of comments submitted on the proposed rule, concerns surrounding trust and integrity are among the most pervasive—expressed both implicitly and explicitly" (2000, 2–29). The following comment demonstrates the explicit use of trust:

> First off, let's determine our relationship. You, the U.S. Forest Service, have been guilty of not sufficiently protecting our natural resources and bowing to industry and political pressure on far too frequent a basis . . . Therefore, I don't trust you to manage OUR national forests in a manner sufficient to provide multi-use as well as conservation of OUR natural resources.

The CAT report also notes that opponents of the proposed rule frequently expressed deep distrust of both the administration and the national leadership of the Forest Service. According to the CAT:

> [Opponents] believe the rule is politically motivated; that the whole public input process is a façade to hide the [Clinton] administration's attempt to build a favorable legacy; that the proposed rule was formulated in unfair, even illegal collusion with environmental groups; that it is an attempt to bypass Congress in creating de facto wilderness areas; that the real intent of the rule is to lock people out of public lands, indeed that it is, according to some, all part of a great conspiracy involving the United Nations to deprive Americans of the rightful use of their lands; and that the decision has already been made, hence nothing they say will matter. (p. ii)

Those who felt the rule did not go far enough also expressed distrust. As in the following example, these commenters typically felt the rule was a means of placating environmentalists while logging would go on as usual:

> The prohibition of roadways in our national forests won't solve any problems or save any forests. Loggers will still be able to log by means of cable technology, helicopters, and other new techniques . . . Was the goal of this law to save what few existing ecosystems we have left, or was it to pass a weak law to temporarily appease environmentalists but at the same time allow the destruction to continue?

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These excerpts illustrate how citizens on various sides of each debate mistrust federal agencies. Interestingly, in examining comments submitted in response to the revised Organic Rule, we found at least a few citizens who reported having their trust restored as a result of the USDA's responsiveness to public concerns. In addition, though we did not determine frequencies in our analysis, issues of trust seemed more prominent in the Roadless Rule comments. This finding may be a function of NOP's **PLS SPELL OUT** more transparent process and the fact that people felt they had an effect on the outcome. Further research should be done to examine the relationship between transparency of the commenting system and the trust of those using it.

One might assume that if mistrust plays such a prominent role in the opposition to both of these rulings, commenters would point to institutions that could be trusted to inform the rule-making process more fairly. One such institution often referred to was science. As we discuss in the next section, savvy laypeople (and their interest groups) know how to use or challenge science, namely normal science, when it serves their interests.

The Role of Science

Although supporters of USDA's organic definition were few, they often pointed to the scientific justification for including the Big Three under the organic label. A Florida farmer, for example, urged agriculture secretary Dan Glickman to rely on the science in standing up to misled environmentalists:

> It has come to my attention that organic terrorists are attempting to use USDA rules to undermine the GM **PLS SPELL OUT** crop industry . . . This is a blatant attempt by ecoterrorists to twist the USDA into a position that is untenable and not science based. It is time for Mr. Glickman to face reality and support American agriculture by standing up to the terrorists . . . GM crops are safe. The process works well. It is time for our gutless agriculture secretary to back the wishes of Congress, the National Academy of Sciences, and numerous scientific organizations and stand up to ecoterrorists with the right decisions.

Another commenter supported USDA's organic definition not because scientific evidence showed the Big Three are safe, but rather, because he felt GMOs were the product of good science and a sign of progress:

> The current proposal contains a prohibition on biotechnology, genetic modification, etc. To do so is to disallow the best scientific technology available

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> in the last centuries to achieve the organic-foods desire, which is to reduce or eliminate the use of synthetic pesticides in the food chain. To disallow good science in this regard is reacting to the emotion of a FEW persons who do not understand the science. To disallow good science in this regard is to turn back the agricultural clock decades! I urge USDA to reconsider this part of the proposal and to allow biotechnology-based science in the organic-food program to achieve the desired result, which is a cleaner, safer, more nutritious, and more abundant food supply.

Commenters who opposed the ruling often pointed either to scientific evidence demonstrating the risks of the Big Three or the lack of scientific evidence demonstrating their safety, as illustrated in a comment by the following Florida man:

> While those from industry will claim that their foods are perfectly safe, there is really no long-term data that support their claim. However, NGOs **PLS SPELL OUT** (like the Union of Concerned Scientists) have shown that some genetically engineered foods are already damaging the envinronment . . . Environmental concerns of this nature have already been addressed by the National Academy of Sciences.

Many nonscientists also recognized the trouble with a strict definition of organic. An Idaho man, for example, urged:

> Please do not let organic food labeling become a victim of political correctness. I know it is hard for you folks to do the right, scientific thing, but organic and other food labels should actually reflect science. This is difficult because all food is composed of organic chemicals, so all food is, by definition, organic!

Another commenter, this time referring specifically to the inclusion of biosolids, argued that "USDA's proposal and the nature of some responses appear to be based on bad science and should be substantially revised." In rare cases, commenters acknowledged a lack of scientific evidence demonstrating the Big Three's risks but asked for a revised rule anyway: "I am a medical student and understand that there may be no scientific proof that these processes harm foods or alter them in any way, but I am also aware that we have a history of labeling drugs and products to be safe that have at a later time been found to cause serious harm."

In the case of the roadless-area ruling, concern about the absence of scientific justification was prominent, especially among those opposing the

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ruling: "Keep public land public. Do not arbitrarily limit access without good reason. The Forest Service should prove a need to restrict access to a certain area on a case-by-case basis." Others felt scientific evidence was being overlooked: "This top-down, one-size-fits-all proposal undermines the cooperative dialogue that takes place during the national forest plan revision and cancels out research, scientific analyses, collaboration, and compromise." The following comments, as quoted in the CAT report, also capture concern over the perception that the Forest Service developed the proposal without sufficient scientific justification:

> This is a terrible—after the fact—attempt to justify a preselected course of action. Manage forests with real science, NOT political science. (CAT 2000, 2–31)
>
> This is another attempt to create political gain by presidential decree, bypassing scientific investigation, congressional due process, and professional forestry. (CAT 2000, 2–31)
>
> The agency's proposed planning rules emphasize the role of science and the need for detailed analyses before taking actions affecting the national forest system . . . Yet, the Forest Service is proposing permanent prescriptions for 54.3 million roadless acres without providing . . . a convincing scientific explanation as to why each and every roadless acre must be kept roadless. (CAT 2000, 3–56)

Supporters of the ruling also demonstrated scientific sophistication by asking for true science or ecosystem science as opposed to forest management science practiced by timber companies:

> I think your proposed rules should go a little farther. Selective nonimpact logging (i.e., helicopter) should be allowed but . . . where true science can assure no negative impact on ecosystem species or habitat terrain. (CAT 2000, 6–47)
>
> What remains, including tracts of land less than five thousand acres, should be off-limits to all but the most sensitive, scientifically based (NOT simply timber science, but science based on biological diversity), and least-impacting logging . . . No logging of any kind should be permitted until a total scientific picture can be documented. (CAT 2000, 6–59)
>
> We suggest that restoration and stewardship contracts for roadless areas be awarded to firms and organizations with professional experience and track records of competence in forest, fire, and restoration ecology. Restoration proposals should be reviewed by independent scientific peers. (CAT 2000, 6–61)

Participants in both rule-making processes demonstrated an ability to use science toward particular ends—whether pointing out its limitations or

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absence or asserting its importance. The result is a stalemate of sorts in both of these rule makings, much as in the previous history of environmental regulations. But science itself is seldom sufficiently persuasive to settle disputes. Citizen participants seem to realize this, as evidenced through their strategy of critiquing the science on one hand and asserting other important public values on the other.

The Role of Values

Commenters on the proposed organic standards frequently alluded to values that were not being taken into account by the proposed definition. Often, these values were referred to as justification for overlooking scientific evidence that might suggest that the Big Three were safe. For example, an accrediting agency explained:

> *Organic* is not a matter of technicalities; it is a philosophical orientation necessarily expressed in terms of rules and regulations. This being the case, it is vitally important that the USDA go out of its way to uphold and preserve the spirit of that orientation in establishing organic standards.

Other commenters mentioned the importance of consuming and supporting the production of natural food. As one consumer stated:

> The reason why consumers like me purchase these products is that we value the natural processes that have generated our own bodies and those of all creatures since life began. We do not want to alter those processes. The whole point of organic food production is that all ingredients and additives should be generated and grown by the processes of nature.

Commenters also combined knowledge of scientific evidence with other value claims:

> Millions of acres of forest are lost each year to fire and logging across the globe. Scientists believe that global loss of [forests] contributes to global warming and the overall destabilization of the global environment. Each loss of animal and plant species is an invaluable tragedy to present and future generations . . . The loss and degradation of any more native forest is an immeasurable loss to the Earth and human societies in ways that we are just beginning to comprehend.

In addition to such cases of symbolic as opposed to scientific meaning, many commenters in both the organic and roadless-area rulings mentioned

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the importance of considering children and future generations. The following comment alludes to the value of children, human health, and the planet relative to the possible financial gain some industries would realize as a result of the proposed organic definition:

> I know that members of giant-industry trade associations such as the Biotechnology Industry Organization, the Grocery Manufacturers of America, and the National Food Processors Association have a lot to gain financially if the proposed national organic regulations become a reality. But is that more important than our children, our health, our planet?

A commenter on the Roadless Rule wrote: "There is something about wilderness that we want to be retained intact for our children and all future generations in this country (and beyond)—it's a spiritual value, I suppose." As another explained: "It is more important than ever to protect what little is left for the security and enjoyment as well as the health and future of the Earth, our children, and our children's children."

Bringing values into the debate is by no means a panacea. What commenters value varies according to the diversity of their opinions on how food should be grown or forests should be used. As the CAT report notes, "concerns about the social impacts of the proposed rule, relative to the value of non-commodity resources, appear to stem from differing views about what constitutes the primary values of public lands. To some people the presence of roads tends to degrade important non-commodity values of public lands, while to others roads enhance those values" (2000, 7-1). In fact, the two sides of the debate are quite aware of how the other side values wilderness. Most supporters, for example, argued that the ways resource-dependent communities value public lands (e.g., for logging or mining, hunting, or motorized recreation opportunities) cannot compete with the intrinsic value of these lands:

> The intrinsic value of these forests supercedes any economic value to be had by mining, logging, etc. By sacrificing the pristine forest ecosystem for immediate returns, we disregard the long-term benefits of protecting these beautiful wilderness areas. Not only do they provide aesthetic and recreational value, but also a life support system that we and the rest of the world depend on. (CAT 2000, 7-2)
>
> It seems that every nature philosopher talks about the wildlands, the woods, and such in terms of their value as places of quiet, solitude, rejuvenation. This and even the smell of the wildlands are among the intangibles banished when roads allow the easy presence of motorized noise and dust and fumes. (CAT 2000, 7-2)

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Meanwhile, opponents of the rule, aware of the perceived spiritual or psychological value wilderness areas hold as escapes for urban dwellers, dismissed such value:

> Some folks view roadless areas as a spiritual and psychological resource. Apparently, several million acres of wilderness are not enough to meet the religious requirements of these nature worshipers, so we must dedicate another sixty million acres to meet their needs. This is used as justification in a nation that bans prayer in the schools and religious materials in public places. (CAT 2000, 7-5)

Another difference between supporters and opponents of roadless-area conservation has to do with which values are most salient to them. While this obviously has to do with social context (e.g., residents of timber-dependent communities value forests economically, and urban residents value them for the intangible reasons noted above), it also has to do with the values that are brought to bear on the rule-making process. Opponents of the rule objected to the perceived injustices of the process and to their potential loss of freedom of access, perhaps even more than to the potential economic impacts of the rule. According to the CAT report:

> Opponents of the proposed rule are (often) concerned about access and many insist in unequivocal terms that as taxpaying citizens they have a right to access these lands which neither the federal government nor the Forest Service may infringe on. It should be noted that some of the most emotionally-laden responses in opposition to the proposed rule are those which focus on the public's right to access. The fear that access may be curtailed elicits an intense reaction in many citizens, self-identified motorized users in particular. Many opponents of the rule frame their opinions in the context of the principles of individualism and freedom they feel are enshrined in the Constitution of the United States. (2000, 1–13)

For supporters, constitutional rights are also important but interpreted in terms of people's right to have public lands that are ecologically healthy or the rights of future generations to appreciate wilderness areas unmodified by humans.

Whether science or values, the bases for asserting one version of ecological reality over another are constantly challenged and negotiated. We discuss in the conclusion possible explanations for why Internet-based public participation as used in these two cases simply reproduced the same conflicts found in most disputes on environmental decision making.

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Implications and Conclusions

The National Organic Program process was an ad hoc attempt at innovation, growing out of midlevel management and personnel who thought that the Internet offered a genuine opportunity for citizens to engage with the comments and positions of others. The Roadless Rule process was distinctly one-way and nondiscursive; there was no opportunity for engagement of differences. Returning to the ecological-symbolic perspective, we suggest that part of the Internet's potential is that it can offer citizens a forum for engaging one another through the sharing of differing perspectives. A more dialogical discourse may overcome the adversarial culture of United States rule making. Rather than negotiating ecological reality as a zero-sum, winner-take-all game, participants might enter into negotiations more aware of the possibility of reaching a symbolic consensus.

The roadless and organic rules allow us to illustrate how a symbolic consensus might emerge. In the organic case, a symbolic consensus on the definition of *organic* was strong enough to lead to a change in the proposed rule. Perhaps a symbolic consensus already existed regarding *organic*, but it was used and seemingly strengthened by repetition throughout the comment process. The open rule making simply allowed the public to insist on this consensus against the proposed rule, which would have altered the definition drastically. For example, arguing that biosolids are organic because they primarily come from carbon-based humans who are part of nature conflicts with the values underlying what *organic* means to most consumers. As many commenters suggested, underlying the current symbolic meaning of *organic* is a set of values pertaining to an ethic of food safety, environmental stewardship, and holistic or natural food production that transcends a strictly scientific determination of what is organic and what is not. This conversation regarding the symbolic meaning of the Big Three was enabled by the open, transparent participation process of the Organic Rule.

With the Roadless Rule, in contrast, citizens were not given the opportunity to engage, let alone develop a symbolic consensus on, the ecological reality underlying forest management practices. While there was no preexisting consensus on the symbolic meaning of forests or on forest management, there also was no opportunity for authentic deliberation, and differences existent before the process remained a barrier to agreement on the policy. The stronger agreement on the public perception of *organic* may help explain why there was much more pressure on the Department of Agriculture to alter its proposed definition, while strong differences on the notion of the forest may have led to the impasse on the Roadless Rule.[5]

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Future research on electronic rule making should continue to use content analysis to examine the use of values and symbolic arguments on the part of the public. The crafting of revised rules also should be examined to see if and how symbolic consensus is integrated into new iterations of proposed rules. In the meantime, trust, science, and public values will continue to play significant roles in regulatory rule-making processes. Consider the following statement from the USDA Web site:

> Based on overwhelming public opposition, this [revised] proposal prohibits . . . [use of the Big Three] in the production of all organic foods even though there is no current scientific evidence that use of the excluded methods presents unacceptable risks to the environment or human health. (USDA 2000)

This demonstrates the strength of both the symbolic consensus on organic and the potential for public values to trump the agency's demand for hard scientific proof. Nonetheless, government agencies and decision makers will continue to perceive the need for science to drive policy and policy implementation in the form of rule making. More open public participation processes may bring values to bear more often. Yet, the cases here also demonstrate that citizens, more sophisticated consumers of science than ever, will continue to call into question inconvenient scientific findings or demand more definitive science when existing evidence leaves any shred of doubt. Again, future research should continue to examine the actual input of the public on proposed rules for evidence of the presence of these discourses.

In theory, the Internet provides novel capacities for reflexive decision making on a national scale. An open, Web-based process has the potential to help move environmental policy making beyond the adversarial distrust, the battles over science, and the state's predisposition against public values. Yet, neither agency in the two cases studied here moved very far toward the potential offered by Web-based participation. In the roadless case especially, the unreflexive use of the Internet for one-way communication reproduced the same debates and conflicts one would expect.

While our focus is on conflicts surrounding trust, science, and other values, the perception of the openness, transparency, and authenticity of the public participation process itself is also an interesting contrast here. Both the former secretary of agriculture Dan Glickman and the former Forest Service chief Mike Dombeck wanted to create the perception that access to participation was open and that their agencies were responsive to the participation they received. In the case of the Organic Rule, Glickman seems to have been successful, as very few comments expressed concern with the public-participation

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process (though many were concerned that the prerule-making public input into organic standards had been disregarded). Agency employees have stated in interviews that they are pleased with the legitimacy gained by the USDA in the process. However, in the case of the Roadless Rule, many commenters felt various interests—environmental and corporate—had been privileged over the voices of individual citizens. The fact that the Forest Service, after a change in administration, failed to support and then proposed to change the rule illustrates the influence of actors other than the consulted public. The Web-based process (along with the final rule) seems to have brought some legitimacy to the USDA on this issue, whereas the closed process of the Forest Service and the continuing conflicts on the Roadless Rule have not improved the perception of the agency.

The frequency with which the public used the Internet in these two rulings and the likelihood of increasing rates of use in the future raise many further questions. Does Web-based participation offer the potential for more widespread public involvement, greater transparency of the process, and a more satisfied citizenry? Would the digital divide systematically exclude some segments of the population from participating? How should such systems be designed, and what procedures should federal agencies follow for collecting, analyzing, weighting the importance of, and incorporating the electronic comments made by citizens? These questions will take time to examine, and methods will have to include yet also go beyond the content analysis used in this study.

In the research discussed here, the ecological-symbolic perspective helps us see how both rulings confront a fundamental paradox of human existence: we simultaneously occupy a symbolic social world and a real physical reality. Values become fundamental to environmental decision making once we see their ability to add symbolic meaning to scientifically understood empirical realities. Open and discursive public involvement, which the Internet can provide if used reflexively, may hold the potential for a working out of scientific and value-based positions in a way absent in current rule-making processes.

Notes

1. Roadless areas are not roadless at all. Rather, the Forest Service hoped to inventory national forests to designate about 31 percent of the agency's holdings as Roadless Conservation Areas where no additional roads would be constructed and many existing roads would eventually be wiped out as maintenance of them ceased. The significance of this policy

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for the timber industry should be highlighted. Historically, the Forest Service has subsidized logging on public lands by bearing the cost of building roads in national forests for the benefit of timber companies who lease the land and then use the roads to cut the trees.

2. Why the Forest Service's approach differed from the National Organic Program's approach that allowed deliberation is a difficult question. Interviews we conducted with agency personnel (not part of our analysis here) suggest that Forest Service supervisors thought it was a major breakthrough on their part to accept e-mail. It simply had not occurred to anyone that the same technology facilitating the acceptance of e-mail could be used to make comments available to citizens to read. Another explanation may be differences between the agencies in terms of how the comments are processed (e.g., read, sorted, and summarized as they arrive versus read but never sorted or summarized). Differences between agencies in reading and analyzing comments are vast. Despite the Administrative Procedures Act's specific requirements for the public comment process, agencies are left to their own discretion when it comes to developing strategies for reading and responding to comments.

3. We do not intend to depict science as a monolithic enterprise in which consensus reigns. Even among scientists, multiple versions of an ecological reality exist, in some cases starkly contrasting one another. What almost all scientific accounts of ecological reality hold in common is a privileging of their view over the lay perspective.

4. The debate is also evident in two edited volumes (Alexander and Pal 1998; Hague and Loader 1999) and work by Coleman and Gøtze (2001).

5. As people engage in negotiations over the symbolic construction of an underlying ecological reality, the question arises as to whether we can ever know what the real ecological limits of our world are. An important aspect of the ecological-symbolic perspective that we have not been able to discuss here is the process of ecological feedback. The symbolic consensuses at which we arrive are constantly challenged by the underlying ecological reality. To the extent that our symbolic constructions violate ecological limits or processes, we are prompted to interpret the feedback and renegotiate our symbolic ecological meanings.

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Stephen Zavestoski is associate professor of sociology at the University of San Francisco. His current research examines the role of science in disputes over the environmental causes of unexplained illnesses and the use of the Internet as a tool for enhancing public participation in federal environmental rule making. He is the coauthor, with Phil Brown, of Social Movements in Health (Blackwell, 2005). His work also appears in journals such as Science, Technology, & Human Values, Journal of Health and Social Behavior, and Sociology of Health and Illness.

Dr. Stuart W. Shulman is assistant professor in information sciences and public administration at the University of Pittsburgh. His research interests include eRulemaking, digital citizenship, and service learning. His recent publications appear in journals such as *Academic Exchange Quarterly, the International Journal of Public Administration, Social Science Computer Review, and Agriculture and Human Values.*

David Schlosberg is associate professor and chair of political science at Northern Arizona University, where he teaches political theory and environmental politics. His recent work includes *Environmental Justice and the New Pluralism* (Oxford) and *Green States and Social Movements* (Oxford, coauthored with John Dryzek, David Downes, and Christian Hunold).