



An experiment in digital government at the United States National Organic Program

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Abstract. Digital communications technology is reconfiguring democratic governance. Federal agencies increasingly rely on Internet-based applications to improve citizen-government interaction. Early efforts in the area of digital government have created new participatory opportunities as well as formidable governance challenges. Federal agencies are working within and across their boundaries to find an e-rulemaking format that is cost-effective, legally appropriate, user-friendly, and well suited to diverse modes of rulemaking activities. One of the overriding issues emerging from this process is the definition of meaningful public participation in rulemaking. An examination of an early case involving the USDA's National Organic Program proposed rule summarizes comments related to genetic engineering, biosolids, irradiation, and the role of the National Organic Standards Board. The USDA's experience suggests a number of complex challenges that must be met to effectively integrate Web-based communications into the federal rulemaking process.

Key words: Democratic participation, Digital government, Information technology, Internet, National Organic Program, Public comments, Rulemaking

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Introduction

Models of discursive democracy favor open, equitable, and rational debate under conditions as close to ideal as possible. Practical efforts along these lines often presuppose a link between greater ecological rationality and more participatory forms of democratic debate (Schlosberg, 1999; Hajer, 1995; Dryzek, 1987). According to one view: "Communicative rationality is the extent to which this action is characterized by the reflective understanding of competent actors. This situation should be free from deception, self-deception, strategic behavior, and domination through the exercise of power" (Dryzek, 1990: 14).

Information technology (IT) has the potential to create conditions for broader input and deliberation that approximate this communicative ideal (Zavestoski and Shulman, 2002). Past experience, for example with emergence of scientific opinion surveys, suggests that adoption of new technology qualitatively alters the nature of citizen participation (Gallup and Rae,

1940; Herbst, 1993; Peters, 1995). As the transition to digital government proceeds, it is critical to parallel its evolution with timely evaluation of the impact of new technologies on formation and articulation of public opinion.

This article begins with an overview of the digital government literature. Experiments in electronic government are breaking untested analytical and procedural ground. Given the dearth of experience with these innovative processes, as well as the absence of empirical studies of their effects, digital governance has an ad hoc quality. While it is appealing to assume that IT-based applications offer the means for more participatory democracy, in fact, efforts along these lines create a new set of challenges. Some of these challenges became apparent in one of the earlier experiments in using Internet technology in the rulemaking process. The nature and outcome of that experiment are discussed, and a sub-set of the response data is analyzed using a computer software application.

The United States Department of Agriculture (USDA) is among those federal agencies with experience employing the Internet for citizen-government interaction.¹ According to the online journal GOVEXEC.COM, the USDA's National Organic Program (NOP) conducted "the first fully electronic rule-making for a major regulation in federal history" (Friel, 1998). This effort yielded a rich qualitative database that, because of its format and size (over 277,000 comments), presented novel analytical challenges, both for researchers interested in the public comment process, and for government information managers and regulatory officials required to be responsive to citizen input. The discussion below suggests that large qualitative data sets can be rendered more amenable to analysis with computer-based analytical applications. To that end, this article surveys some of the key themes that emerged in the NOP comment process, and it situates this watershed event in the development of federal eRulemaking initiatives.

Digital government

Digital government has evolved into both an interdisciplinary field of governmental activity and an area of academic research (Shulman et al., 2003a; Fountain, 2001). As early as 1993, the technology press noted extraordinary examples of digital democracy using the Internet to conduct global-scale town meetings (Anthes, 1993). By 1995, the Internet was the "de facto standard" for citizen access to government information (Noack, 1995: 29). However, accompanying the initial euphoria over the potential of IT to transform social relations, a chorus of new concerns emerged. For example, widespread use of the Internet for interfacing with government posed new challenges regarding citizen privacy (Schwartz and Leone, 1997). The most ardent skeptics challenged "the myth of cyberspace as the current pinnacle of real democracy, freedom and information exchange" (Hern and Chauk, 1997: 36).

Nonetheless, students of democratic theory turned their attention to digital government encouraged by its potential to increase democratic participation (Grossman, 1995; Hill and Hughes, 1998). A number of observers remarked that the communicative possibilities created by IT would revolutionize the public sphere. There also was early recognition of potential problems. The most obvious concern was that digital government would widen gaps already separating the information and resource rich from the poor (Shulman et al., 2002; Wilhelm, 2000; Malina, 1999). Furthermore, there were questions about the power of a technological "silver bullet" to foster a more attentive and

informed public. An empowered citizenry deliberating on more readily accessible information is possible, yet so too was a fragmented and non-deliberative populace (Alexander and Pal, 1998; Schlosberg and Dryzek, 2002). Along with the new technology might come new biases that would adversely impact the policy process. As Black (1998) observed, IT is not inherently neutral (also see Lessig, 1999). Clearly the broader implications of quantifiable (access) and non-quantifiable (power) factors impacting the transition to digital government require considerably more systematic evaluation.

During the Clinton Administration, the President's Information Technology Advisory Committee (PITAC) maintained that IT would produce profound improvements in the workplace, health care, and government responsiveness. The 1999 PITAC report also raised the issue of socioeconomic problems associated with using this "powerful tool for democratization." While free flowing information was considered crucial, access to it and knowledge about its application had to be equitably distributed among the population. "We should use information technology to bridge the gaps in our society," the PITAC report concludes, "not to create new ones" (PITAC, 1999: 13). The Bush Administration's 24-point eGov strategy continues to stress the need to use IT to bring government deliberations efficiently and transparently into the lives of citizens.

Digital government is often touted as the basis for a paradigm shift that surmounts existing attitudes about government. Hague and Loader (1999) argued that apathy and cynicism are characteristic when government is perceived as unresponsive. Although IT has increased the flow of information from government to citizens, it has been less influential in creating opportunities for citizen-to-government communication or substantive citizen deliberation. Pessimistic observers argue that the Internet is just as prone to elite domination as were earlier modes of communication. One scholar has suggested that it is "absurd" to assume that technological innovation itself can lead to greater public control of the governmental agenda (Davis, 1999: 170).

Another view has suggested that civil society, democratization, open government, and the rule of law are dependent on the full development of IT capability and the concomitant widening of access and knowledge about new technologies. More complete citizen access, in this view, hinges on the development of "electronic safety nets" allowing citizens to obtain access to and exert influence upon federal agencies (Perritt Jr., 1997). Pioneering efforts to that end have been celebrated as "Deweyan systems" to the extent they provide citizen-based forces able to

counter existing media and interest group politics. In the best cases, "Deweyan" experiments promote civic interaction and build social capital (Aikens, 1999).

Recent federal legislation and Executive orders attempt to promote greater accessibility, efficiency, and effectiveness in citizen-government relations by recasting the traditional concept of citizens as consumers in need of tools and knowledge that maximizes their satisfaction with and loyalty to government (Hernon, 1998; Temin, 1997). Some scholars have asked, however, whether important decisions about the future development of the National and Global Information Infrastructure (NII/GII) are being made with adequate public input. While technical barriers to digital democracy are steadily being eroded, there is nonetheless a need for more public forums that allow participation in decision-making about the rights and responsibilities of a user-citizenry (Ogden, 1998).

In sum, the impact of digital government on democratic participation is a critical new issue, one that is widely discussed yet inadequately evaluated and studied. An interesting case in point can be found in recent US government initiatives in the area of regulatory rulemaking. Among the 24 electronic government initiatives promoted by the Bush Administration's Office of Management and Budget (OMB), the creation of a single government portal for all federal rulemaking efforts ranked as a high priority.² On January 23, 2003, the Environmental Protection Agency launched the OMB-mandated www.regulations.gov web site, marking a critical milestone in the transition to digital government. Ongoing changes in the way in which public comments are solicited, collected, and evaluated will have significant implications for the democratic process. The experiment by the National Organic Program (NOP) with electronic rulemaking provided agency personnel and students of the federal rulemaking process with an early glimpse of the dilemmas and new digital governance issues that may be encountered as the federal government undertakes a broader digital government program. NOP's use of Internet technology to gather and post public comments marked a critical juncture in the adoption of e-rulemaking techniques at the federal level, and as such is worthy of closer attention.

The national organic program

On December 15, 1997, the USDA opened a public comment period on long-awaited, proposed national standards to govern the marketing of organic agricultural products. The publication of the proposed rule in the Federal Register and over the Internet

was accompanied by a request for public comment to be submitted either by fax, US mail, or via the Internet. Interested parties not only were invited to submit their own comments to this web site; they also could read the comments of others sent to the NOP through all the other media. Following publication of the proposed rule, the USDA received over a quarter-million public comments via the World Wide Web, fax, and primarily through the postal mail. USDA officials described the level of citizen response as unprecedented in agency history (Julian, 1998). As a result, Agriculture Secretary Dan Glickman announced on May 8, 1998 that "fundamental" changes were to be made in the proposed rule. "If organic farmers and consumers reject our national standards," stated Glickman, "we have failed" (USDA, 1998).

On March 7, 2000, Secretary Glickman presented a revised rule and called for a second round of public comment. Among the changes that emerged from this unique process was the removal of controversial provisions concerning the use of biotechnology, irradiation, antibiotics, and municipal biosolids (sewage sludge) in the organic production process. "This is the most comprehensive and strongest organic standard in the world," said Glickman, "I believe this is exactly what American consumers and organic farmers want" (USDA, 2000a). A critic of the USDA's original proposal, Dr. Margaret Mellon of the Union of Concerned Scientists, declared this "could turn out to be the most important rule" the USDA has issued in the past 20 years. Mellon further noted that the agency "has never before been responsive to consumers' desires or demands" (Burros, 2000).

The history of this process is instructive, shedding some light on the potential impact of the Internet on democratic deliberations in rulemaking. It must be remembered that the USDA was an early player in e-rulemaking. Not surprisingly, its efforts resulted in more questions than solutions. Nonetheless, it provided a strong impetus and experience on which to build. At this point, more background may be helpful to fully appreciate the dynamics of the NOP's rulemaking.

In accordance with Section 6518 of the Federal Organic Foods Production Act of 1990 (OFPA), the USDA was required to establish a National Organic Standards Board (NOSB). The NOSB was designed "to assist in the development of standards for substances to be used in organic production and to advise the Secretary on any other aspects of the implementation of this chapter" (OFPA, 1990). The Secretary of Agriculture was responsible for appointing a 15-member board made up of organic farmers, handlers, retailers, and certifiers, as well as environmental experts, public or citizen interest group

representatives, and one expert grounded in toxicology, ecology, or biochemistry. The OFPA established a range of responsibilities for the NOSB, including development of a national list of prohibited substances and practices, the convening of technical advisory panels, and the establishment of evaluative criteria for labeling and certification.³

The NOSB was appointed in 1992. It spent four years consulting with the public and various stakeholders in the organic food industry and prepared a highly detailed set of recommendations as the basis for a national organic standard. The goal was to create a uniform set of guidelines so that consumers purchasing food labeled organic would know precisely which farm practices went into the creation of the product. The NOSB report included guidelines for a national list of accepted and prohibited materials, pest control and fertilization practices, feed and confinement of livestock, among many others. For example, the NOSB biotechnology policy stated "that the class of genetically engineered organisms and their derivatives be prohibited in organic production and handling systems" (NOSB, 1996).

When Secretary Glickman introduced the NOP's initial proposal, the NOSB's biotechnology policy was one of several recommendations that seemed destined for history's dustbin (Bleifuss, 1998). A *New York Times* editorial stated,

In the National Organic Program's proposed rule, there are some troubling signs of vacillation and, perhaps, of industry or political pressure. The Agriculture Department, calling for further public commentary, has put off the final decision on several practices that the National Organic Standards Board had rejected after extensive public consultation. These included irradiation, the use of sewage sludge as fertilizer and the use of genetically engineered crops. Whatever the value of these technologies and practices may be, none are part of accepted organic practice, and each offers a beachhead within the program for major non-organic agricultural corporations. (NYT, 1997)

Other press criticism offered scathing analyses of the gap between the NOSB's recommendations and the NOP's initial proposed rule. The financial desk at the *LA Times* pronounced the USDA guilty of "proposing regulations for the nation's food business that ignore the industry's practices, philosophy and desires" (Groves, 1998). In the press, disdain for the agency proposal was almost uniform. "The new rules make it plain," wrote the *New York Times* editorial board in 1998, "that the department listened harder to the voice of agribusiness, which has always derided organic agriculture, than it did to the people who

proved its incontestable worth" (NYT, 1998). Speculation in the press also focused on the influence of other federal agencies, such as the Food and Drug Administration and the Environmental Protection Agency, "that in the past have supported genetic engineering, irradiation, and the use of municipal sludge" (Conover, 1998). Dr. Mellon of the Union of Concerned Scientists asserted that once the proposal left the hands of the NOSB, decisions about the rule were made "behind closed doors" (Julian, 1998).

Ironically, while the Agency appeared to reach out to consumers through the use of the Internet to receive and share public comment on the proposed rule, at the same time it gave the impression that it was turning its back on those same consumers, preferring instead to cater to powerful industry stakeholders. Newspapers challenged the USDA for appearing to cave in to pressure from biotechnology firms. One editorial concluded that the "USDA program blatantly water[ed] down the basic tenets and philosophy of the organic food movement" (Pontacq, 1998). Press attention magnified the public outcry and made it possible for opponents to register a massive response. News reports and editorials often reproduced a summary of the most controversial issues, occasionally providing contact information for citizens wishing to register their views (Schiraga, 1998; Jenkins, 1998).

From the other side, biotech firms and related trade associations were among those who criticized any potential USDA capitulation to citizen demands as bowing to the unscientific will of the people (Bleifuss, 1998). Monsanto, for example, was typical of firms with a large financial investment dependent on consumer acceptance of genetic engineering. On its web site, Monsanto described citizen opposition to their products as "Genetically Modified Nonsense" (DeGregori, 2000). Critics of the biotech industry, however, took issue with Monsanto's ecological bravado. Monsanto's CEO, Robert Shapiro, received a protester's pie in the face, while test plots of genetically modified corn in India were burned in a protest known as "Operation Cremate Monsanto" (Meadows, 1999: 104). Terms like "Frankenfoods" entered the public discourse as protestors were "sowing apprehension in the boardrooms of biotechnology giants like Monsanto and Novartis Seeds" (Luoma, 2000: 53; see also Margaronis, 1999; Froggatt and Rankine, 1999). Against this backdrop, hundreds of thousands of comments on the NOP's proposed rule made this fervent and vocal opposition undeniable.

The sheer quantity of citizen commentary in response to the initial proposed rule was unprecedented in the history of USDA regulatory rulemaking. The Internet appears to have been one factor, though clearly not the only one, leading to this outcome.

It served both as an educational and many-to-many communications mechanism. Publicity and the well-organized public outcry fueled one another, while the NOP's website facilitated greater citizen-government and citizen-citizen interaction. With widespread favorable news coverage of the opposition movement, and the thread of suspicion widely expressed about the effect of corporate influence on the USDA, the press and the organic movement constituted a mutually reinforcing feedback loop.

The challenge of large public comment data sets

Current and future experiments in digital government will invariably generate data sets that require the application of the most advanced methods available for processing information. In the absence of reliable tools, large text data sets that result from citizen-government interaction may be considered more of an encumbrance to, rather than a benefit of, the new technological age. A number of advanced commercial off-the-shelf (COTS) software applications allow researchers greater analytical leverage over such large qualitative data sets. What began as a collection of rudimentary content analysis tools, text retrieval devices, and text-base managers, is now a powerful array of techniques and procedures for analyzing large amounts of unstructured qualitative data (Fielding and Lee, 1998).

New methodologies developed by digital government researchers will shape the conduct and structure of future citizen-government interactions as well as the manner in which the data sets will be evaluated (Shulman et al., 2003b). Close and systematic attention to operational constraints will affect future innovation and design of digital government platforms for the collection and synthesis of qualitative data. Continuous collaboration between government information systems managers, software designers, as well as social and computer scientists and administrative law scholars will be needed to create new systems better suited to meet citizen demands for meaningful access to the regulatory rulemaking process.

Analysis of a subset of the NOP's web-collected comments

The NOP provided the author with all 21,430 comments submitted via the web site from its comment pool of over 270,000. Each document contained a response to the initial proposed rule submitted to the USDA between December 15, 1997, and March 15, 1998. A random sample of 525 documents was gener-

ated from the NOP data set. A total of 16 inoperable or blank files were discarded leaving a data set of 509 comments. NUD*IST 4, a qualitative data analysis software application, was used with the data sub-set to obtain some insight into the effectiveness of the program as an analytic tool.⁴ The primary functions employed were text string and union-index searches. The qualitative summaries of the analysis presented in this paper represent only a first experimental cut into this large data set. The files were edited to remove non-essential text and then imported into a NUD*IST project for qualitative data analysis. Personal identification of responders was limited; therefore it was not feasible to conduct a demographic analysis. For the purposes of this study, responders were designated by an up to 5-digit file number, which corresponds to the file number in the USDA data set.

The leverage of the basic search function is not the power to easily tabulate quantitative indicators. Indeed, the NUD*IST tool is quite limited in this regard, due to the frequency of typographical and spelling errors in the public commentary. Instead, each search resulted in the creation of a node (coded, indexed categories that computer scientists might call buckets) in which a copy of retrieved text is deposited. For example, when the text string search was designated as "natur," a node was created with 123 paragraphs in which the term nature or natural (or some variant) appeared. Other search terms used but not reported in this study included "label," "toxic," and "health." Once the data set is organized into nodes, the large quantity of data becomes more manageable, and the qualitative analysis of the organized text collection then falls to the researcher. The following section provides a summary report on the subsequent qualitative analysis on four specific issues covered in the proposed rule: genetic engineering; biosolids; irradiation; and the role of the NOSB.⁵

Genetic engineering

Clear themes emerged from an examination of the commentary. For example, many respondents perceived genetically modified organisms (GMOs) as relatively unknown and inadequately tested. The NOP comments overwhelmingly called on the USDA to follow the guidelines established by the NOSB, in effect preserving organic food as a GMO-free consumer choice. Many insisted it is a consumer's right to know whether food carrying the USDA organic label violated their beliefs about the sanctity of organic production practices. For example, one opponent of the proposed rule stated,

The USDA proposal conflicts with current practice, consumer expectations, and international trade. In particular, there is no place in organic agriculture for genetically engineered organisms, irradiation, sewage sludge, inerts not proven to be safe, and various materials allowed under superfluous categories of allowed materials and contamination. These include “unavoidable residual environmental contamination,” “non-synthetic,” “incidental additive,” “synthetic amino acid additives,” “non-active residue,” “non-agricultural ingredient,” “non-organic agricultural ingredient or product,” “active ingredient in any input other than pesticide formulations,” “inert ingredient in any input other than pesticide formulations,” “inconsequential additives,” “extraneous additives” and “unintentional additives”. (#20746)

Respondents generally believed that the national standard ought to leave consumers free from the fear of harm, thereby maintaining the organic label as the “last refuge for safe food” (#53). “Every human being must be given the right,” urged one consumer, “to choose whether or not to expose themselves [sic] to this new form of genocide [sic]” (#2494). Another respondent suggested,

A conservative standard, one that the consumer can rely on for protection from dubious or dangerous or unproven elements, earns respect both nationally and internationally. 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 wellbeing. (#624)

Despite USDA assertions that the organic label was a marketing and not a public health claim (the rule was promulgated by the Agricultural Marketing Service), many citizens nonetheless vehemently insisted that supporting strict rules for organic agriculture was a personal and public health choice:

You are working to take away my rights to have pure food. Doesn’t the present state of health in this country tell you anything. [sic] Humans were not created to eat toxic chemicals, sewage sludge, nuclear wastes. The effects of hormones and chemicals is [sic] clearly seen in the high cancer rate in this country. Toxic food, air, and water is [sic] causing sickness throughout the country and it is a really sad day when the government is promoting this. (#19753)

The question of trust arose repeatedly. “If this rule passes,” forewarned one consumer, “I will no longer buy organic foods” (#745). Opponents of genetic engineering favored what they described as more natural, sustainable, and environmentally friendly practices, such as those already used by the best organic farmers. Consumers and retailers spoke of a loss in confidence in the term organic that is likely to result under the proposed rules. “To accept genetically engineered seeds as organic would be to destroy the entire concept of ‘organic’ ” (#1009).

Respondents felt the USDA was out of touch with the needs and desires of organic consumers and producers. Consumers might, in response, circumvent an unacceptable new label:

The whole point of organic food is to encourage a mindful [sic] attitude towards the environment and other living beings. Your proposed rule makes a mockery of this, and seem [sic] to be designed (deliberately?) to destroy confidence in organic methods. I see the rules as yet another attempt by the USDA to help big industry at the expense of the rest of society. If your rules, as currently written, become law, organic farmers will have to by-pass them by coming up with an alternative to the word “organic” which continues to exclude genetic engineering. (#2625)

In sum, respondents left little doubt that inclusion of GMOs in the proposed rule was a major affront to the established tradition of organic agriculture. Citizen expressions of shock and horror, while appearing alarmist to advocates of biotechnology, represented the sincere beliefs of stakeholders directly affected by the proposed rule. Expressions of outrage are a proven citizen tactic in environmental disputes (ex., Tesh, 2000). One comment stated: “I consider genetic engineering to be potentially a greater threat to the future of the human race than the atomic bomb” (#7454). The proposal’s inclusion of genetically modified crops in the organic category violated core beliefs about the relationship between organic farming, nature, purity, healthy living, and a host of interrelated personal and political concerns that spur consumers to pay a premium in the marketplace for organic products.

For the respondents, the inclusion of GMOs represented a weakening of the existing standards and thus a threat to precipitate a boycott of the new label. They cited limited research into the long-term effects of genetic engineering as a rationale for objecting in the most strident terms. “As American citizens,” wrote one respondent, “we have the right to food which is as healthy and natural as possible. We resent the ‘unfriendly takeover’ of the organic foods industry by

agribusiness, chemical-biotech corporations, and giant supermarket chains” (#7142).

Sewage sludge and biosolids

Respondents were nearly unequivocal in their rejection of the provision for including biosolids as part of the organic production process. “Don’t let organics go down the sewage sludge drain!” concluded one opponent of the Big 3 – GMOs, irradiation and sewage sludge (#1058). “At its foundation,” wrote another, “this disgusting and filthy idea is an absolute contradiction of the sensibilities and philosophy of organic farming” (#6380). Fears existed about toxic chemicals sent into drainpipes by homes and industry. Opponents worried about the presence of concentrated dioxin, PCBs, harmful organisms, and “hundreds of other possible contaminants” (#1105) in sewage sludge. One person stated: “Experts have determined that over 60,000 toxic chemical compounds can be found in sewage sludge” (#6852). “The barium waste from my body,” commented another respondent, “obviously will wind up as sewage sludge. I do not want this and other toxic chemicals being used as fertilizer on my foods or my children’s foods” (#1280). Yet another asserted: “Sewage sludge or ‘Bio-solids’ (as they are so politely named) contain many of the elements that organic farmers, gardeners and people who buy organic produce are working SO HARD and spending to much time and money to avoid” (#1834). In much the same vein, a truth-in-labeling proponent asked: “How about a special label for these other products, e.g., ‘Grown with sludge’ – then consumers can make informed decisions” (#6323)?

To one organic consumer, the inclusion of municipal sewage indicated capitulation by the government to forces hostile to the organic sector:

We are astonished by the USDA’s even considering irradiation, sludge and a sizeable percent of non-organic ingredients within the standard. Why are you doing this? Who is buying this influence? There are growers and producers who have for years worked to establish meaningful standards. There are now millions of consumers like us throughout the country who understand and trust these standards . . . You have obviously been corrupted by other federal agencies or business interests who do not want to see further popularization of organic foods as we know them. You appear to be writing a definition that has absolutely nothing to do with the concerns of the growers, producers or consumers who care about this. (#3566)

In sum, the electronically submitted comments expressed overwhelming opposition, disbelief, and dismay related to the proposed inclusion of municipal waste in the organic food production process. One respondent asked, “If sewage isn’t good enough for Del Monte and Heinz, why should it be good enough for [certified organic] Cascadia Farms?” (#5468) While some admitted the use of biosolids in food production is not inherently wrongheaded, these respondents tended to insist that, at a minimum, such products should be labeled accordingly. Clusters of concerns appeared to be associated with known and unknown hazardous elements believed to be concentrated in sludge product, as well as the pattern of disregard for the NOSB recommendations.

Irradiation

The proposed inclusion of controversial practices under the banner of organic, in this case irradiation, resulted in an almost entirely unified argument by the public. Irradiation did find some support in exceptional cases. For example, one respondent wrote, “We want to urge you strongly to facilitate the use of irradiation in the protection of food. We feel that it is almost criminal that Americans are being exposed to agents that could readily be eliminated by a proven safe and effective method” (#1828). Nonetheless, the overwhelming majority of comments protested various perceived health and environmental threats associated with the practice of treating food with ionizing radiation. One recurring sentence appearing in a number of the comments stated: “Radiation introduces radiolytic products and known carcinogens or mutagens” (#8380). Another respondent asserted: “The production and waste associated with the nuclear material necessary to conduct irradiation [sic] is completely inconsistent with my goal as a consumer of buying organic as a way to support environmentally sustainable agriculture and food handling processes” (#879).

In general, organic advocates recoil at the idea of associating their health-conscious practices with what they perceived to be the unhealthy legacy of nuclear power and weapons. They argued that food quality is at risk, as in the case of lettuce, which wilts when irradiated. Another consumer worried about the loss of taste. In one typically blunt remark, a respondent noted: “I can’t believe that anybody with any integrity and intelligence would allow irradiation to be classed as Organic” (#2735). Another stated, “To any common sense consumer, ‘organic’ does not mean food treated with irradiation, municipal sludge or any of the other

crazy gucci-clad lobbyists' concepts" (#7752). One organic grower asserted,

The national organic stds. must prohibit all such high-risk, synthetic materials in accordance with one of the fundamental principles that guides all organic farming – first, do no harm. Also – Ionizing Radiation – this has no place in an organic system. Irradiation is not the solution to clean, safe food – prevention, namely cleanliness in the field, slaughterhouse, store and kitchen will keep contaminants out of food in the first place. If food (non-organic) is irradiated then for the public's sake, please clearly label all such items. (#6745)

Another comment asked, "What are the long term risks of irradiated food? Why would I knowingly feed my family food that had been exposed to 20,000 times the annual exposure level of radiation accepted for a nuclear power plant worker?" (#6852). An opponent of the Big 3 made this set of demands: "I say NO to Cobalt-60 food irradiation, NO to the use of municipal sewage sludge as fertilizer, and NO to genetically-engineered organisms. Please, for all of us, place a wake-up call to the USDA" (#1745).

In sum, the irradiation commentary presented nearly uniform opposition to the provision, with some notable exceptions. Similar to GMOs and biosolids, respondents generally feared known and unknown health risks and environmental impacts associated with the process. "Both genetic engineering, and irradiation," stated one respondent, "run counter to the whole concept of organic food. Both are artifacts of massively capitalized industry and both are repugnant to conscientious buyers" (#2625). Opponents specifically objected to what they perceived as an intrusion by big business into the organic sector. Numerous respondents asserted that the long-term effects of irradiation were poorly understood and object strenuously to the insertion of handling and disposal of radioactive materials in the organic production process.

The role of the NOSB

For those familiar with the statutory basis for the NOSB (the OFPA of 1990), the proposed rule represented an affront to the primacy of the organic community in setting its own standards. Respondents uniformly called for recognition of the NOSB's statutory and popular authority, collective wisdom, and expertise. All the NOSB comments in the study objected to the departure from its recommendations.

The commenters challenged standards they deemed to be flawed, often beyond repair. Numerous responses suggest the USDA should withdraw the entire rule and

return to the NOSB guidelines. Consider, for example, the respondents who stated, "The proposed rule is totally unacceptable! This undermines the work of the NOSB and it should be rewritten to reflect and maintain the existing high standards" (#18849), or "Undermining, diluting, and distorting the efforts of the NOSB certainly does not encourage respect or trust in the USDA or USA for that matter" (#17261), or else "Standards are a good idea, but they must be sanctioned by the NOSB. This is a huge decision, one to be made with future generations in mind. Withdraw the proposal, and let the NOSB wield its lawful authority for proposing standards" (#17330).

On other issues, such as regressive flat fees vs. a sliding scale by size, factory farming, livestock feed, eco-labeling, and decision making authority under the OFPA (ex. concerning synthetic additives), there was notable unanimity. Respondents believed the NOSB was entitled to greater power, viewing it as an independent counterbalance to the power of agribusiness in the regulatory rulemaking process. For many, a rule that ignored key NOSB findings called into question the legitimacy of the democratic process. One person issued this challenge:

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? Please prove to us that you aren't just a tool for agribusiness, biotech and chemical companies and the giant supermarket chains. If our government shows themselves incompetent and unable to listen to consumers and to the recommendations of respected organizations such as the NOSB and IFOAM, the organic movement will have no real choice to avoid economic ruin other than to issue our own alternative, non-governmental rules and start certifying and regulating ourselves. Please, withdraw the Proposed National Organic Regulations and rewrite them strictly following the recommendations of the NOSB. Help us to believe in and trust our government!! (#16670)

Discussion

The deluge of public comments had an impact. A significantly modified rule was published March 7, 2000. Two days later, a *New York Times* editorial commented,

The department's response to the community of organic farmers may herald a welcome new sensitivity to a sector of the farming world that has suffered from official neglect. The Clinton administration now needs to approve a final rule before it leaves office. The Agriculture Department should take what it has learned in developing these regulations – especially the act of listening intently to farmers – and apply it to other programs that affect small farmers. For their part, consumers and farmers should recognize the power they wield when they work together. (NYT, 2000)

While this case study appears to bolster the enthusiasm of digital government proponents, many questions remain about what this particular innovation (e-rulemaking) suggests for the future of the regulatory process. The precise impact of engaging the public through the Internet remains far from clear. Was it simply the controversial nature of the subject matter that generated the unanticipated response volume or did USDA and private use of the Internet stimulate broader participation? Other concerns have been expressed. For example, will personnel at federal agencies embrace the participatory democratic spirit that seems to have infused the NOP? On a more substantive note, is there such a thing as too much citizen input?

These issues become provocative both in practical terms as well as in public policy debates, especially in those instances where the existing scientific or policy-making paradigm tends to undermine fears expressed by members of the community. There is a long-standing question of what weight to give to certain categories of responses, which may become more numerous as the Internet is more widely adopted for public interactions with government. As mass-produced e-mails, listserv facilitated one-click comments, and other electronic lobbying tactics become more common, it is not clear what weight these comments will carry inside the regulatory agencies. Neither is it certain to produce a more deliberative environment for rulemaking if the architecture of the new unified federal portal does not permit two-way or many-to-many communications.

This article began by noting the link that discursive democracy theorists posit between ecological rationality and public participation. The NOP's final rule, and the process through which it was formulated, appear to support that linkage. Indeed, the organic standard represents an anomaly in United States environmental policy-making precisely because it adopts an approach closer to the Wingspread Precautionary Principle (Raffensperger, 1998) than to the more common risk assessment paradigm, largely as a result of

the impressive level of citizen involvement (also see O'Brien, 2000).

In his introduction of the revised rule, the Secretary Glickman declared, "I do want to point out that the fact that we are once again announcing a proposed rule on national organic standards is a living example of our democracy at work. The people spoke very loudly I might add" (Glickman, 2000). A key dilemma for future regulatory interventions involves this tension between citizen power in a democratic system and the authority of scientific discourse. Consider this summation from the USDA web site: "Based on overwhelming public opposition, this [revised] proposal prohibits . . . [the use of GMOs, biosolids, and irradiation] in the production of all organic foods even though there is no current scientific evidence that use of the excluded methods present unacceptable risks to the environment or human health" (USDA, 2000b). It appears that the outrage of citizens – an orchestrated grassroots strategy facilitated and magnified by the Internet – may have been instrumental in achieving success for the organic community in the regulatory rulemaking process. An important by-product of the USDA's willingness to be responsive to citizen comments was the avoidance of further diminution in public trust. The responses to the revised rule reflected widespread satisfaction with the agency's final product, as did the press coverage once the new rule was finalized.

Arguably, the process was rendered more equitable because of the use of the web, though the outcome appeared to give greater weight to massive stakeholder sentiment, rather than dominant scientific opinion. Officials in the NOP indicated that the Internet-based approach created a unique forum for establishing a consensus among a large and widely dispersed group. Information flows from citizen to government and citizen to citizen were increased because comments were visible on the NOP web site while the comment process was still open for further submissions. In this case, agency concessions to consumer preferences were possible, according to NOP staff, because the organic standard was viewed within the USDA as a marketing rather than health and safety rule. To be sure, many of the respondents challenged this distinction in their comments, but ironically, this was the basis for allowing the public's values to trump the dominant scientific views in the relevant federal agencies. When asked for final pro and con tallies, an NOP staff member reiterated that rulemaking is not conducted as a plebiscite, therefore such tabulations were never a factor in the decision process. Rather, what mattered was that stakeholders with cogent input were able to make their case, not only to the USDA, but also to the larger interested community. In the end,

both NOP staff and organic stakeholders concluded that the final rule was greatly improved, in part thanks to the Internet. Despite the burdens created by the volume, officials were able to point to the comments in a controversial rulemaking to argue that stakeholders were getting what they asked for.

The public's ability to read the views of others during the comment period was an improvement, at least in theory. NOP officials reported they could tell that people had been reading the comments of others and responding directly to them. There was, however, only inconsistent evidence in the sampled comments that people actually engaged the web site in such a deliberative manner. Some referenced the comments of others; many others chose not to do so. Furthermore, while the text of the proposed rule was accessible on-line, there were indications that many people perhaps did little more than read a flyer at their local food co-op, or transcribe listserv- and interest group-promulgated messages into their own words. While the innovative process had the technical underpinnings to facilitate a Deweyan dialogue approximating the discursive democracy model, it is not clear that a higher order of communicative rationality was attained. Indeed, most of the comments were oriented to specific policy changes, rather than a sustained effort at reaching a common understanding under contentious conditions. Civic dialogue and social capital did not flourish. In terms of discursive democracy, it would be a mistake to conclude that the Internet allowed a more reflective understanding to emerge on all sides. Instead, a massive public protest resulted in an unusual accommodation of stakeholder demands.

Asked to reflect on the impact of the web-delivered comments, a technician responsible for putting the NOP's information system together with "bailing wire and bubble gum" tellingly recalled "that many comments were meaningless and posted their political views only, some profane, and some even very offensive, with little substantive value, as opposed to meaningful technical feedback" (Heazlit, Ted. Cited from an on-the-record personal correspondence, July 3, 2002).

A review of the web-submitted comments substantiates this impression. Many of the public comments revealed no intent to deliberate about the organic production process. Rather, they issued a series of pre-packaged ultimatums and a collective plea for recognition of the tradition of organic agriculture.

Based on the analysis presented here, we can speculate in a limited fashion about the effect of the technology on this particular decision, but more so on trends in the formation, articulation, and collection of public opinion in Internet-assisted regulatory rulemak-

ings. As the discussion suggests, in late 1997 and early 1998, both the available information technology and the public's ability to use it for a rational dialogue were still at an early developmental stage. There was no commercial, off-the-shelf method to receive and post a quarter of a million comments to the web. USDA technicians, mid-level managers, and private sector contractors strung together an ad hoc system that wound up putting a half dozen rule drafters to work sorting and scanning messages delivered by a variety of media. In some respects, the technical bottlenecks and overwhelming size of the response created unintended consequences that were unwelcome problems for agency personnel.

To date, there is very little empirical research that demonstrates e-rulemaking results in greater satisfaction, less litigation, or simply better rules. Time, further research, and comparative studies, will allow us to better judge whether this unique experiment in digital government enhanced the democratic policy process. Certainly, the ease of access, for those able to get to the NOP web site, was far superior to the traditional rulemaking method, which forced interested, usually resource-rich, parties to come to Washington if they wished to view the docket during the comment period. The site offered an unusually accessible and transparent process in which competing arguments went head-to-head over the merits of specific policy choices.

The publicity associated with the NOP's innovative process was a clarion call for scholars, federal agencies, and IT firms to develop new tools study and manage the emerging e-rulemaking paradigm. Although the web-based collection of public comments may not have been critical to the NOP rulemaking outcome, in the historical trajectory of the emerging e-government, this innovation was a significant event at a critical juncture.⁶ While presidential directives and IT innovation at the federal level moves us steadily toward a single web portal for all federal rulemaking efforts, it remains important to study the impact of these new technologies on the process and substantive outcomes.

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Foundation. For information on the Digital Government Organization (dg.o), see <http://www.diggov.org>.

Notes

1. The Office of the Federal Registrar has compiled links to the agency e-rulemaking sites at http://www.archives.gov/federal_register/public_participation/rulemaking_sites.html. Perhaps the best example is the Docket Management System (<http://dms.dot.gov>) at the US Department of Transportation, though the EPA recently rolled out its eDocket system, which is the basis for a new unified federal docket access system at www.regulations.gov.
2. The Office of Management and Budget outlines the President's e-government initiative at <http://www.whitehouse.gov/omb/inforg/egovstrategy.pdf>. The goal is to establish a single e-rulemaking portal for all federal agencies. While there are obvious cost savings at stake, the agencies are reluctant to give up control over their own rulemaking processes.
3. The OFPA specifically lists the following considerations under the evaluative component of the NOSB work: The potential of such substances for detrimental chemical interactions with other materials used in organic farming systems; The toxicity and mode of action of the substance and of its breakdown products or any contaminants, and their persistence and areas of concentration in the environment; The probability of environmental contamination during manufacture, use, misuse or disposal of such substance; The effect of the substance on human health; The effects of the substance on biological and chemical interactions in the agroecosystem, including the physiological effects of the substance on soil organisms (including the salt index and solubility of the soil), crops and livestock; The alternatives to using the substance in terms of practices or other available materials; and its compatibility with a system of sustainable agriculture (OFPA, 1990).
4. According to QSR, the developers of NUD*IST "set out to do exactly what the acronym claimed – to assist researchers handling Non-numerical Unstructured Data by Indexing, Searching and Theorizing" (QSR, 2000). The data presented in this article represent a rough first cut at the data using the most basic search tools to help make sense of the randomly sampled comments.
5. The qualitative summaries in this paper reflect searches that could not capture every instance of an appropriate response for a particular coded category; hence the quantitative data generated by NUD*IST were omitted. For example, the search for the string "genetic" did not capture references to "GMOs" or "biotechnology" unless the word genetic appeared in the comment. In the case of biosolids, while results from searches for "biosolid," "sewage," and "sludge" could be combined in a single node, the software would not copy the comment into the node if the responder was, as many were, guilty of a typo or misspelling.
6. Considerable work remains to develop a research agenda for studying the many questions raised by e-Rulemaking. In January 2003, a national workshop sponsored by the NSF and Harvard's Kennedy School of Government convened

about 40 social and computational scientists, legal scholars, and agency personnel to develop a broader interdisciplinary research community focused on e-rulemaking (see http://www.ksg.harvard.edu/cbg/Conferences/rpp_rulemaking/).

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