

Citizen Agenda-Setting and the National Organic Program

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Introduction

Federal agencies are increasingly deploying new technologies to improve citizen/government interaction. In a statement released by the White House on December 17, 1999, the Clinton Administration reinforced the importance of upgrading the "capacity of regulatory agencies for using the Internet to become more open, efficient, and responsive...." Efforts in the area of electronic government have created new opportunities as well as challenges associated with real-world operating constraints. For example, on December 15, 1997, the United States Department of Agriculture (USDA) sought public comment on an initial set of proposed national standards to govern the marketing of organic agricultural products. 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). As a result, the NOP received the 1998 Government Technology Leadership Award for its innovative use of the Internet in public service.

Following publication of the proposed rule over the Internet, the USDA received over 275,000 public comments by E-mail, WWW, fax and postal mail. USDA officials publicly stated the level of citizen response was unprecedented in agency and perhaps federal government history (Julian 1998). As a result, Agriculture Secretary Dan Glickman announced on May 8, 1998 that "fundamental" changes would 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 the revised rule and called for a second round of public comment. Among the changes growing out of this unique process were the removal of controversial provisions concerning biotechnology, irradiation, antibiotics and the use of 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 2000). A persistent 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 U.S.D.A. has issued in 20 years." Mellon noted that the agency "has never before been responsive to consumers' desires or demands" (Burros 2000).

This experiment in electronic government has yielded a rich database that, because of its format and size, presents novel analytical challenges. This is the case both for researchers interested in the public comment process and for government information managers and regulatory officials who must find new ways to be responsive to citizen input. Improved methodologies are needed to efficiently assess and integrate citizen comments into the regulatory process. This researcher currently is collaborating with USDA staff who implemented the public comment process. Staff members have supplied an initial data set of over 20,000 comments submitted to the NOP via Internet technology. One objective of this research is to use the initial data set to test the viability of computer-based qualitative data analysis for the efficient analysis and synthesis of citizen comments. Preliminary findings based on analysis using NUD*IST (Non-numerical Unstructured Data Indexing, Searching and Theorizing) software will be presented later in the paper.

A second, longer-term objective is to develop a design for a multi-agency project modeled on the USDA's NOP experiment. Therefore, a number of key questions will be explored in the planning phase that will be of interest to the academic community and federal regulatory agencies as they standardize systems for gathering and analyzing citizen input. How can the public comment process be modified to ensure the input of underrepresented groups who may not have Internet access? Will the groundbreaking NOP process shape the way the federal government uses advanced technology when managing large qualitative data sets derived from citizen/government interaction? What role can qualitative data analysis play in expediting informed analysis of patterns in public commentary and in what ways can these findings be used to affect policy decisions?

To assess these and other questions, this paper begins with an overview of the literature on digital government. Experiments in electronic government are breaking new, relatively untested analytical and procedural ground. Given the dearth of experience with these innovative processes, ongoing experiments in digital governance have a notable ad hoc quality. New research in this field can create models, generate data sets, and evaluate techniques that illustrate both the benefits and limitations of digital government. While it may be intuitively appealing to assume that Internet technology (IT) is a panacea for more participatory democracy, paperless regulation, and other facets of the inexorable transition underway, in fact, real world efforts along these lines can create as many problems as they solve. At a minimum, greater attention needs to be focused on the meta- and micro-analytic problems relevant to social scientists interested in the problems of democratic governance.

A second objective of the initial study is to assess the viability of computer-based qualitative data analysis as a technique for mining data gathered through the use of Internet technology in the public comment process. The significance of this second objective is that current and future experiments in digital government will invariably generate data sets that necessitate the use of the most advanced methods and tools available for processing information. In the absence of reliable methods and tools, large text data sets from citizen/government interaction may be considered more of an encumbrance to rather than a benefit of the new technological age. A number of commercial software applications have been developed that allow researchers greater analytical leverage over large qualitative data sets. What began as a collection of rudimentary content analysis tools, text retrieval devices and text-base managers, has developed into a powerful array of techniques and procedures for analyzing large amounts of unstructured qualitative data (Fielding and Lee 1998).

Refinement of existing tools and methodologies can be expected to shape the way in which future citizen/government interactions will be conducted and the manner in which the data sets will be evaluated. Close and systematic attention to real-world constraints will help shape future innovation and design of digital government platforms for the collection and synthesis of qualitative data. Collaboration between government information systems managers, software designers, as well as social and computer scientists will contribute to the creation of new systems that may well be better suited to meet citizen demands for meaningful access to the regulatory rule-making process.

Present State of Knowledge

Digital government is an emerging field of academic research and governmental activity. As early as 1993, reports appeared in the technology press about what were then considered extraordinary examples of "digital democracy," using the Internet to conduct global-scale town meetings (Anthes 1993). By 1995, the Internet was declared the "*defacto* standard" for citizen access to government information (Noack 1995, 29). However, with the initial euphoria over the potential of IT to transform social relations, came a chorus of new concerns. For example, widespread use of the Internet for interfacing with the government poses new challenges regarding the protection of citizen privacy (Schwartz and Leone 1997). For the most ardent skeptics, it remains important to challenge "the myth of cyberspace as the current pinnacle of real democracy, freedom and information exchange" (Hern and Chauk 1997, 36).

Students of democratic theory have nonetheless increasingly turned their attention to digital government because of its potential to increase democratic participation (Grossman 1995; Hill and Hughes 1998). A number of scholars have remarked that the communicative possibilities created by IT could revolutionize the public sphere. The danger, of course, is that digital government might serve to widen gaps already separating the information and resource rich from the poor (Malina 1999). Furthermore, there are questions being raised about the power of a technological "silver bullet" to foster a more attentive and informed public. While an empowered citizenry capitalizing on more easily available information is possible, so too is a fragmented and non-deliberative populace (Alexander and Pal 1998). There is also concern that using new technology may introduce new biases to the policy making process. As Black (1998) observed, IT is not inherently neutral. Indeed, there is a need to examine the social implications of quantifiable (access) and non-quantifiable (power) factors in which the transition to digital government is embedded.

Digital government has been promoted as the basis for a paradigm shift that surmounts existing attitudes about government. As Hague and Loader (1999) have noted, apathy and cynicism are characteristic when government is perceived as unresponsive. The tendency in the past has been for IT to increase the flow of information from the government to the citizens, but it has been less influential in creating opportunities for citizen-to-government information flows or substantive citizen deliberation. Pessimistic accounts charge the Internet is just as prone to elite domination as were earlier media. One scholar has suggested it is "absurd" to assume that technological innovation itself can lead to greater public control of the agenda-setting process in government (Davis 1999, 170).

Significant challenges stem from a new conception of citizen/government relations that is part of the transition toward digital government. It has been suggested that civil society, democratization, open government, and the rule of law are increasingly dependent on both the full development of IT capability and the concomitant widening of access and knowledge about new technologies. The realization of more complete citizen access, in this view, hinges on the development of "electronic safety nets" that allow citizens to obtain access to, and influence upon, federal agencies (Perritt, Jr. 1997). Pioneering efforts to that end have been celebrated as "Deweyan systems" to the extent that they provide for citizen-based forces to counter existing media and interest group politics. In the best cases, "Deweyan" experiments promote civic interaction and build social capital (Aikens 1999).

Recent conferences and ongoing committee work have resulted in several publications that evaluate the prospects and challenges associated with increasingly electronic forms of government. The findings include general claims about the new opportunities and demands for more efficient citizen/government interface, and specific recommendations about the types of problems that could be addressed through collaborative and cross-disciplinary efforts. For example, given the complexity of the new challenges facing the Federal Information Services, there is a consensus that state of the art techniques are as yet unable to meet the challenge of managing very large data sets (Schorr and Stolfo 1997). Some initiatives, such as Information Technology for the Twenty-first Century (IT²), premise a "shining future" on breaking down traditional barriers to information and government access, while noting there is much research to be done on social and economic factors (National Science and Technology Council 1999).

In what is perhaps the most thorough analysis of the challenges for the transition ahead, the report of a 1998 multidisciplinary workshop argued that technology alone cannot meet public demands or solve democratic dilemmas. Questions abound about the new implications for citizenship, leadership, representative government and institutional innovation. Democratic theory, in this instance, can help chart the rules, rights, and responsibilities of government in a digital era. At stake are issues concerning trust in government, the quality of citizen input, and the functionality of existing institutions in the new environment. As this report noted, the tools for data mining and analysis are underdeveloped and lack standardization. To solve some of these analytical and practical dilemmas, greater collaboration between social and information scientists is needed, particularly those efforts that link academic and government institutions in joint projects (Dawes et al 1999).

The President's Information Technology Advisory Committee (PITAC) maintains that IT will result in profound improvements in the workplace, health care, and government responsiveness. The 1999 PITAC report, however, also anticipates the problems of using this "powerful tool for democratization" that may stem from socioeconomic factors. While free flowing information is considered crucial, access to it, and knowledge about how to use it, must be equitably distributed among the population. "We should use information technology to bridge the gaps in our society, " the PITAC report notes, "not to create new ones" (PITAC 1999, 13).

Recent legislation and Executive orders have sought to promote greater accessibility, efficiency and effectiveness in citizen/government relations by recasting the traditional conception 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, however, have asked whether important decisions about the future development of the National and Global Information Infrastructure (NII/GII) are being made without consideration of public input. While technical barriers to the realization of the NII are steadily being eroded, there is a need for more democratic forums that allow the clear articulation of the rights and responsibilities of a user-citizenry (Ogden 1998).

Lessons can be drawn from the experience of Congress with the influx of email correspondence in recent years. Congressional members and their staff have had to confront new challenges associated with mass e-mailing and so-called astroturf lobbying from sources that

may or may not be constituents (Owen, Davis and Strickler 1999). Similar challenges will invariably confront federal employees integrating IT into the regulatory rule-making process. There may be relevant lessons based on other nations' experiences. For example, one study of Canadian experiments in teledemocracy suggests that while the benefits in theory include overcoming dispersion, inequality and scale barriers to participation, the actual evidence of these results is often harder to come by (Cross 1999).

Political scientists are among those who have worked on models of discursive democracy that favor open, equitable, and ultimately rational debate under conditions as close to ideal as possible. These efforts, for example, link greater ecological rationality and more participatory forms of democratic debate (Dryzek 1987; Hajer 1995). 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" (Dyrek 1990, 14). Clearly IT has at least the potential to create conditions for debate and deliberation that approximate this communicative ideal. Past experience, for example with the advent of scientific opinion surveys, suggests the transition to new technology can qualitatively alter the nature of citizen participation channeled through a new organ (Gallup and Rae 1940; Herbst 1993; Peters 1995). As the transition progresses, therefore, it will critical to evaluate the effect of new technologies on the formation and articulation of public opinion.

The Case of the National Organic Program

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 a mix 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. The OFPA specifically lists the following considerations under the evaluative component of the NOSB work:

1. The potential of such substances for detrimental chemical interactions with other materials used in organic farming systems;
2. 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;
3. The probability of environmental contamination during manufacture, use, misuse or disposal of such substance;
4. The effect of the substance on human health;
5. 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;

6. The alternatives to using the substance in terms of practices or other available materials; and
7. Its compatibility with a system of sustainable agriculture. (OFPA 1990)

The NOSB was appointed in 1992. It spent four years consulting with the public and various stakeholders in the organic food industry. The NOSB prepared an elaborate set of recommendations as the basis for a national organic standard. The goal was to create a uniform set of guidelines so that when consumers purchased food labeled organic they knew 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 on December 15, 1997, however, the NOSB's biotechnology policy was one of several key recommendations that seemed to be heading for the dustbin of history (Bleifuss 1998). The *New York Times* editorialized:

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 criticism was more scathing in the analysis of the gap between the NOSB's recommendations and the NOP's initial proposed rule. The financial desk at the LA Times pronounced that the verdict was in and the USDA was guilty "of proposing regulations for the nation's food business that ignore the industry's practices, philosophy and desires" (Groves 1998). Disdain for the agency proposal was nearly uniform in the press. "The new rules make it plain," editorialized the *Times* 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). Dr. Mellon of the Union of Concerned Scientists asserted that once the proposal left the hands of the NOSB decisions about the proposed rule were made "behind closed doors" (Julian 1998).

Newspapers ridiculed the department for caving in to pressure from biotechnology firms. Often news reports and editorials reproduced a summary of the most controversial issues, even going so far as to provide contact information for citizens wishing to register their views (ex. see Schiraga 1998). Letters to the editor routinely announced this was just another "example of the government partiality toward Big Business interests over those of the consumer" (Hershaft 1997; Maurer 1998). Biotech firms and trade associations were among those who criticized the eventual capitulation to citizen demands as bowing to unscientific will of the people. Firms with

large financial stakes hinged on consumer acceptance of genetic engineering, such as Monsanto, make it prominent on their web-site that they see this form of citizen opposition to their products as "Genetically Modified Nonsense" (DeGregori 2000).

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 (to recycle waste)" (Conover 1998). Clearly this was a case where press attention magnified the public outcry and made it possible for opponents to register a record response. One editorial flatly stated that the "USDA program blatantly waters down the basic tenets and philosophy of the organic food movement" (Pontacq 1998).

Citizen Agenda-Setting: Responses to the NOP

The citizen commentary in response to the initial proposal was an unprecedented mass foray into the regulatory rule-making process. It is too early to explore hypotheses about whether the press attention propelled the citizen agenda to prominence, fueling its intensity, or whether this opposition movement was a genuine grassroots movement that, by its virtue of its inherent intensity, deserved considerable and positive media attention. Given the widespread favorable news coverage of the opposition movement reflected in a Lexis-Nexus search, and the thread of suspicion expressed about the effect of corporate influence on the USDA, it is safe to begin with the observation that the press and the mass movement proved to be mutually reinforcing. Furthermore, as one report noted, the "original proposed rule elicited protest from all sectors, including . . . celebrities such as Willie Nelson, Neil Young, and John Mellencamp" (Conover 1998).

The remainder of the paper sets out some of the preliminary findings based on analysis of the basic text string and index searches of the NOP data using NUD*IST (see Appendix A & B). The focus is on the comments on what came to be known publicly, and within the NOP, as the Big 3, genetic engineering, sewage sludge, and irradiation. Much more work remains to be done to test the viability of qualitative data analysis tools in the regulatory rule-making environment.

Genetic Engineering

A basic text string search for "genetic" yielded a report with 285 text units (15%) drawn from 250 (49%) of the comments in the pilot sample. The comments presented a remarkably uniform set of concerns and objections regarding genetically modified foods. None of the 250 responses dealing with genetic engineering supported the proposed rule. The commentary focused on the dangers of long-term health concerns, disrespect for existing practices, and environmental issues, such as biodiversity and cross-pollination. Genetically modified organisms (GMOs) were perceived by many citizens as relatively unknown and inadequately tested. The comments 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 was a consumer's right to know whether food carrying the USDA organic label violated their beliefs about the sanctity of natural production practices.

Respondents commented that the national standard should 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 genecide [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)

The question of trust arose repeatedly. "If this rule passes," forewarned a consumer, "I will no longer buy organic foods" (#745). The threat that consumers and farmers would not embrace the rule later prompted significant revisions to meet these concerns. 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 wrote about the loss in confidence in the term organic likely to result under the proposed rules. "To accept genetically engineered seeds as organic would be to destroy the entire concept of 'organic'" (#1009). Another typical response suggested it was "totally unethical for any State in this world to label genetically processed food/ingredients as 'Organic'" (#1268).

The theme emerged that the USDA was out of touch with the needs and desires of organic consumers and producers. Consumers warned they would 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 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)

Another comment against the inclusion of GMOs was expressed in theological terms:

I oppose the use of genetically engineered materials in foodstuffs on religious grounds, and therefore this proposed regulation is a threat to my religious freedom. For all practical purposes it is not possible to live in human society without purchasing food. CERTIFIED ORGANIC labels allow me to determine which foods are genetically natural and therefore religiously acceptable to me. The proposed regulation would take destroy my ability to make that determination and thus would violate my religious freedom. This is unacceptable. (#1475)

In summary, the respondents left little doubt that inclusion of GMOs in the proposed rule was a major affront to the established tradition of organic agriculture. The expressions of "shock" and "horror," while appearing alarmist to advocates of biotechnology, represented the sincere beliefs of the people most directly affected by the proposed rule. 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 proposed 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 are precisely what spur consumers to pay a premium in the marketplace for organic products.

Inclusion of GMOs represented a weakening of the existing standard and threatened to precipitate a boycott of the new label. The dearth of research into the long-term effects of genetic engineering prompted many to object 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 Union

A basic text string search for "sewage" yielded 160 text units (9%) in 137 (27%) of the documents. A search for "sludge" yielded 234 text units (13%) in 214 (42%) of the documents, and a search for "biosolid" yielded 46 text units (2%) in 45 (9%) of the documents. An index search using the union function (see Appendix A) revealed that at least one of the three sewage terms appeared in a total of 268 text units (14%) in 239 (47%) of the documents. Just as in the case of GMOs, respondents had something to say about the use of municipal sewer sludge or biosolids in about half of the comments in the pilot sample. Also akin to the GMO comments, many respondents questioned the reasons for disregarding the advice of the NOSB, which suggested biosolids not be included in the organic production process.

The respondents were unequivocal in their rejection of the three terms captured in the sewage union search. "Don't let organics go down the sewage sludge drain!" concluded one opponent of the Big 3--GMOs, irradiation & sludge (#1058). Fears were expressed about toxic chemicals sent into drainpipes by homes and industry. A union search of "toxic," "toxin" and "heavy metals" yielded 128 text units (7%) in 110 (22%) of the documents. Opponents worried about the presence of concentrated dioxin, PCBs, and "hundreds of other possible contaminants" (#1105) in sewage sludge. "The barium waste from my body," commented one 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). Stated another: "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). Still another remarked: "Think of all of the things that go from your house into the sewer -- human waste, used tampons, and all types of chemicals from laundry soap to solvents and household cleansers, just to name a few" (#5468). In much the same vein, the argument for labeling in one case asked rhetorically: "How about a special label for these other products, e.g., "Grown with sludge" - then consumers can make informed decisions" (#6323).

To one established 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 summary, the Sewage union search revealed overwhelming opposition, disbelief and sincere dismay over the proposed inclusion of municipal waste in the organic food production process. While some admitted the use of biosolids in food production was not inherently wrongheaded, they 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

A basic text string search for "radiation" yielded 186 text units (10%) in 172 (34%) of the documents. Once again, the inclusion of a controversial practice under the banner of organic resulted in an almost entirely unified argument. Irradiation, however, did find some support in the 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). Another comment did not oppose the practice provided it was properly labeled. Similarly, one person wrote: "While iionizing [sic] radiation seems beneficial on the whole it seems inconsistent with organic" (#5779).

Nonetheless, the overwhelming number of comments protested various perceived health and environmental threats associated with the practice. "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 recoiled at the idea of associating their health-conscious practices with the unhealthy legacy of nuclear power and weapons. Food quality was also considered at risk, as in the case of lettuce, which wilts when irradiated. Another consumer worried about the loss of taste quality. 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. [sic] 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 pointedly 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).

In summary, the irradiation commentary was uniform in opposition to the provision, with some notable exceptions. The respondents generally feared known and unknown health risks and environmental impacts associated with the process of exposing organic produce to gamma radiation or the ionizing effect of Cobalt 60. Opponents specifically objected to what they perceived as yet another intrusion by big business. A union search of the so-called Big 3, indicating the presence of either the term genetic, irradiation, or any of the three terms in the sewage union search revealed that at least one of the Big 3 terms appeared in 442 text units (24%) in 341 (67%) of the documents. Furthermore, a Big 3 intersect search shows all three concepts appeared within the same text unit 97 times (5%) in 93 (18%) of the documents.

Conclusion and Plans for Further Work

This paper represents simply a first cut into a much larger project that seeks to learn the lessons of the NOP experience with the citizen comment process. Clearly something historic is transpiring on several levels. On March 9, 2000, two days after the release of the revised rule, the *New York Times* editorialized:

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)

The research that lies ahead will seek to pull out of the NOP experiment a model that will contribute to the creation of even more efficient, effective and democratic platforms for citizen commentary. While this is a case study that bolsters claims by proponents of digital government, there remain as many questions as answers about what this bodes for the future of the regulatory rule-making process. For instance, will other federal agencies embrace the democratic spirit that

seems to have infused the inner-workings of the USDA? Can citizen agenda-setting be as effective in other policy realms? Is there such a thing as too much citizen input? These and other questions will come into play as the research takes shape in the days and months ahead.

Appendix A

Methodology Used in the Preliminary Analysis of the National Organic Program Data

The USDA's NOP provided over 20,000 text documents. Each document contains a response to the initial proposed rule submitted to the USDA via the Internet between December 15, 1997 and March 15 1998. A random sample of 525 documents was generated from the NOP data set. The files were edited to remove non-essential text and imported into a pilot NUD*IST project. According to the designers of the NUD*IST software package:

From the earliest versions, NUD*IST set out to do exactly what the acronym claimed - to assist researchers handling Non-numerical Unstructured Data by Indexing, Searching and Theorizing. Hence a project has two parts, one for data documents and the other for an index, where researchers create nodes, as containers to store ideas, coding, and the results of searches. The Index System has always been highly flexible, allowing creating and exploration of categories by coding, merging, shifting and, with N4, managing in either a "free" collection of categories or hierarchical "tree" structure. Searches of text or of patterns of coding support a uniquely wide range of code based retrieval and theory building. Answers to searches can be saved to become part of the next question, so qualitative inquiry can be built up iteratively pioneering for software a process we termed system closure. (QSR 2000)

The pilot analysis of the data is just getting underway. The primary tools employed to date are the text string and index search functions. The summaries presented in this paper are preliminary and represent only a first experimental cut into a huge data set. More careful and comprehensive analysis will be conducted in the coming months as the pilot project expands into a full-scale study. In basic text searches, NUD*IST identifies every instance of the selected text string in the sample. The quantitative data presented in this paper shows two indicators:

- 1) the raw number of text units containing the string
- 2) the number of documents in which the string appeared

A text unit in this study is designated as a paragraph. The sample of 509 documents contained a total of 1850 text units devoted to comments on the NOP's initial proposed rule. In most cases, the text units measured by NUD*IST reflects the paragraphs designated by the respondents' use of hard returns. In a small number of cases, a sequence of single-sentence text units was collapsed into a single text unit. For example, when the respondent stated "I oppose:" then listed a series of points as their own text unit, each of which is comprehensible only when collapsed into a single text unit.

The basic text search creates a node (a coded, indexed category) in which each text unit containing the sought after string is stored. 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) appears. The index searches employed to date were "union" and "intersect" functions. The effect of the union operation is to find the text units that are coded by any one or more of the nominated nodes. For example, the union search of nodes created by basic text searches designated "sewage" "sludge" and "biosolids" revealed that in 268 of 1850 text units (14%), or 47% of the documents, views were expressed about at least one of the three terms. The effect of the intersect operation in NUD*IST is to find the text units that are coded by every one of the nominated nodes. For example, the intersect search of nodes designated "label" and "genetic" revealed that in 124 text units (7%), or 22% of the documents, the term label and genetic appeared in the same paragraph.

The leverage of the basic and index search functions is not simply the power to easily tabulate quantitative indicators. Each search results in the creation of a node in which a copy of retrieved each text unit is deposited. The qualitative analysis of that collection of text units remains for the researcher. This paper represents the first attempt to begin that more thorough qualitative analysis.

Appendix B

Quantitative Summaries of the Pilot Data

***Comments (basic search for all the comments)**

Total number of text units retrieved = 1850 (100%)

Retrievals in 509 documents (100%)

Genetic

Total number of text units retrieved = 285 (15%)

Retrievals in 250 documents (49%)

Sewage Union (Sewage, Sludge, or Biosolid)

Total number of text units retrieved = 268 (14%)

Retrievals in 239 documents (47%)

Toxic Union (Toxic, Toxin, Heavy Metal)

Total number of text units retrieved = 128 (7%)

Retrievals in 110 documents (22%)

Radiation

Total number of text units retrieved = 186 (10%)

Retrievals in 172 documents (34%)

Big 3 Union (Genetic, Radiation or Sewage Union)

Total number of text units retrieved = 442 (24%)

Retrievals in 341 documents (67%)

Big 3 Intersect

Total number of text units retrieved = 97 (5%)

Retrievals in 93 documents (18%)

NOSB Union (NOSB or National Organic Standards Board)

Total number of text units retrieved = 180 (10%)

Retrievals in 141 documents (28%)

Label

Total number of text units retrieved = 338 (18%)

Retrievals in 239 documents (47%)

Label Sludge Union Intersect

Total number of text units retrieved = 97 (5%)

Retrievals in 93 documents (18%)

Label Genetic Intersect

Total number of text units retrieved = 124 (7%)

Retrievals in 111 documents (22%)

Label Radiation Intersect

Total number of text units retrieved = 71 (4%)

Retrievals in 67 documents (13%)

Natur (to capture natural and nature)

Total number of text units retrieved = 123 (7%)

Retrievals in 97 documents (19%)

Health

Total number of text units retrieved = 169 (9%)

Retrievals in 138 documents (27%)

Antibiotic

Total number of text units retrieved = 109 (6%)

Retrievals in 98 documents (19%)

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