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# Deliberative E-Rulemaking Project: Challenges to Enacting Real World Deliberation

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**ABSTRACT.** This article describes the challenges facing a federal government–funded initiative to promote online deliberation to improve the public comment process by federal and state government agencies in the United States. The three year project met several difficulties. Some have been technical, but our primary obstacle has been in securing partnerships with government agencies. Due to institutional, legal, and organizational challenges, many government agencies are resistant to opening up the public comment process to a deliberative structure, although some change occurred following the Obama administration’s Open Government Initiative. This article describes the objectives of the original research project and details the challenges faced with the hope of guiding future deliberation research projects that aim to work with federal agencies in the U.S.

**KEYWORDS.** E-rulemaking, government rulemaking, natural language processing, online deliberation

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On January 21, 2008, President Barack Obama established the Open Government Initiative. The initiative's goal was to make federal government and executive agencies more transparent, open to greater participation from the public and stakeholders, and mindful of increased collaboration across agencies and with the public. Yet, one area where greater transparency, collaboration, and participation could occur but presently does not is the rulemaking process. In the United States and in many other democratic nations, government agencies are required to invite public comment in advance of enacting a new or modified regulation. This public comment process represents perhaps the largest potential arena for direct public input into government, and is a critical arena for input and improvement of federal and state agency regulatory rules. It also is an area ripe for experimentation with deliberation methods and technologies.

For the past three years, we undertook a project meant to expand the potential of e-rulemaking while using this practical context to address key issues in advanced information technology and the social science of deliberative groups, what we called the Deliberative E-Rulemaking (DeER) project. This article describes the theoretical roots of our research, the novel technological and structural approaches to online deliberations with which we have been experimenting, and the major challenges we encountered in attempting to test this approach with federal and state government agencies in the U.S. In sum, building a real-world project that requires partnering with government agencies is a risky venture. It is challenging to find agencies willing to use deliberative methods as part of rulemaking, the legal and institutional frameworks of government agencies are an impediment, and it is difficult to entice citizens and stakeholders to participate in a deliberation on a rulemaking without sufficient agency buy-in. In sum, the institutional and social climate within which we attempted our project posed major challenges that serve as a lesson for understanding why real-world deliberation is an undertaking not for the faint-hearted, though one that is necessary to

advance best practices and to identify ways to facilitate more democratic policy-making.

### ***JUSTIFYING DELIBERATION IN E-RULEMAKING***

Before describing the deliberation project, it is necessary to explain why we saw deliberative methods as beneficial in the rulemaking context, and what we perceived as problems with current deliberative approaches, upon which we wanted to improve.

E-rulemaking is an untapped area to explore deliberative practices. Public comments historically have not been as helpful as desired by government agencies because of the generally poor quality of the comments (Shulman, 2006). Although public comments have in some instances shaped the final rule (Yackee, 2005), concern has been raised about the small numbers of the public who actually participate (Kerwin, 2003), and the apparent framing by lobbying and activist groups to treat the public comment process as a referendum where each comment is framed as a "vote" (Shulman, 2009). Yet, there is hope as we move into the "digital era of governance" for innovative ways to better engage the public in the rulemaking process (Dunleavy, Margetts, Bastow, & Tinkler, 2006). The shift to "e-rulemaking" with the creation of Regulation.gov, a one-stop portal to look up and comment on proposed regulations, led to optimism that more citizens would participate in the comment process (Carlitz & Gunn, 2005). So, far, though, that optimism has been unfounded, as research suggests that political elites and stakeholders are still more likely to comment than members of the general public (de Figueiredo, 2006; Shafie, 2008).

Yet, there is reason to think that a deliberative approach would improve the rulemaking process. Political theorists have, as Dryzek puts it (2002), taken a "deliberative turn" with analysis of the normative desirability of a deliberatively engaged public and the procedural requirements for such engagement (Bohman, 1996; Chambers, 1996; Gutmann & Thompson, 1996). In particular, public deliberation has come to

be viewed by theorists as the basis of democratic legitimacy (Benhabib, 1994). Legitimacy requires both an informed public and one that defines the values that shape policies. A legitimizing function of public deliberation would seem to be attractive to government agencies, given the difficulty they have in securing public legitimacy, particularly on “wicked” policy problems.

Although theorists have discussed the value of deliberation, researchers have found that formal deliberations—in which a sample of the population is given a chance to learn about an issue and discuss it in small, typically face-to-face, groups with professional facilitation and established discussion norms—can have a variety of beneficial effects. Deliberations have been found to increase participants’ knowledge of the policy issues under discussion and shift people’s attitudes on the issues (Barabas, 2004; Farrar et al., 2010; Luskin, Fishkin, & Jowell, 2002), increasing the likelihood of consensus (List, Luskin, Fishkin, & McLean, 2006). Some scholarship suggests that deliberations can increase the legitimacy of institutional decisions (Tomkins, Zillig, Herian, Abdel-Monem, & Hamm, 2010) and improve the citizenship of participants (Gastil, Black, Deess, & Leichter, 2008; Price & Cappella, 2002). Against that backdrop, government agencies should be interested in techniques that could help create a more informed and engaged public that reaches greater consensus on issues.

While encouraging, the literature on deliberation does not entirely speak to the circumstances of government agency rulemaking public comment processes. These processes are legally required to be accessible to the entire public. In more popular rulemakings, this would involve accessibility to thousands of geographically dispersed individuals. Face-to-face deliberations, which are the most studied, would be prohibitively expensive. Government officials consulted for this proposal indicated that besides the costs of human facilitators, organizing such facilitation—hiring, training, and scheduling—would be prohibitively time-consuming and complicated. Agencies likely have concerns about the impartiality of people who represent them.

In response to such potential obstacles, we examined online deliberations that would occur without facilitation, but with natural language processing (NLP) technologies that could fulfill some of the tasks of facilitators, such as answering questions. Our research sought to determine whether online deliberations with NLP tools in a rulemaking context would have some of the positive effects seen in face-to-face deliberations.

In addition to these broad issues, the DeER project sought to examine and address specific shortcomings that are of particular concern in online deliberations without facilitation in a rulemaking context. First, citizens are usually poorly informed (Delli Carpini & Keeter, 1996; Gilens, 2000; Neuman, 1986), in part because of information costs—the time and effort needed to become informed. Poorly informed participants are not aided by current agency practices of providing voluminous raw information online, but virtually no tools to organize or understand this information (Noveck, 2004). Second, participants are politically unsophisticated (Converse, 1964; Luskin, 1987; Neuman, 1986). They do not organize their understandings of the topic under abstractions and generalizations; they are “aschematic” or non-experts (Zeitiz, 1997). This impedes the ability to think in creative and intelligent ways about that topic. The tools we sought to develop can help people organize information and seek definitions of terms, both of which may help participants grapple with abstractions.

At the group level, the problem arises of unique information sharing. People typically do not share it with others, limiting what the group can learn through discussion (Gigone & Hastie, 1997). A second problem is the potential spiral of silence. People who sense they are in a minority on an issue may be less likely to contribute to a discussion (Glynn, Hayes, & Shanahan, 1997; Noelle-Neumann, 1993), thus limiting the range of perspectives expressed and contemplated. A third problem is that people, in an effort to be polite, may avoid conflict and minimize thoughtful analysis (Conover, Searing, & Crewe, 2002; Eliasoph, 1998; Rosenberg, 2005; Ryfe, 2005), in part because deliberation evokes a conception of citizenship that stresses consensus (Muhlberger, 2005b). This tendency may be

higher among those who are insufficiently confident in their ability to analyze and critique other points of view. And so participants in public deliberations may fail to engage due to a “spiral of agreeableness.” We sought to develop push technologies that would increase the likelihood of people sharing information and not spiraling into agreeableness.

At the collective level (the set of all discussion groups), there is the problem of scale. Large numbers of participants in a multitude of small groups create a large volume of words, ideas, concepts, and the like. This, in turn, bears directly on the problem of how officials can digest the outputs of such a deliberation, given the large volume of messy and difficult to encapsulate ideas and opinions expressed. Another problem, related to scale, is that of information sharing across groups. Individual groups may identify good ideas and facts, but the full value of these ideas and facts would be exploited only if they are shared across the collectivity of groups. In the absence of such sharing, good ideas and facts may vary randomly in policy implications across groups, resulting in zero average effect on policy attitudes, as found in one study (Muhlberger, 2005a). Sharing information across groups could stimulate the development of additional good ideas and facts and help the community of groups develop “collective intelligence”—the capacity to intelligently address policy issues as a collective. Small work groups have been seen as useful for promoting information processing (Hinsz, Tindale, & Vollrath, 1997); the question is how to effectively take the intelligence of individual groups to the collective level of all groups. Finally, to address the problem of information sharing and to encourage collective intelligence, groups need help coordinating. For example, group representatives could share a group’s ideas across groups. This raises problems such as how to keep representatives accountable to their home group members who may not have the time or motivation to follow all aspects of their representatives’ discussions. We considered addressing problems of scale and coordination with a multilevel deliberation technique and NLP.

## **MULTIPLE-LEVEL DELIBERATION**

In order to address some of the above issues, we sought to experiment with multiple-level deliberation (MLD), which uses multiple levels of groups to address the scale and information problems of standard deliberation. MLD was inspired by the social organizational technique of sociocracy. According to qualitative accounts, sociocracy was successfully deployed in running Dutch businesses (Endenburg, 1998; Endenburg & Pearson, 1998). A MLD type deliberation was utilized in the participatory budgeting process adopted by the city government of Porto Alegre, Brazil, in the 1990s (Fung, 2002). Ten percent of the city’s population participated in layered deliberations that resolved difficult budget issues. Urban infrastructure development greatly increased, while corruption and patronage appear to have declined. The World Bank enthusiastically promoted participatory budgeting, and by 2000, 140 Brazilian municipalities adopted some form of the process.

In MLD, participants meet in small online discussion groups of about ten people. After a period of group discussion, participants select two members to represent their views at a higher-level group that represents multiple lower-level groups. Representatives would be selected with proportional representation to ensure a full range of views at higher levels. Because the hierarchy of MLD groups involves exponentiation, a handful of levels could represent tens of thousands of discussants. Information can travel both up and down the multilevel structure, allowing the groups to share information and develop more specialized and intelligent functions. Lower-level group members would follow the progress of higher-level groups, and representatives would return to their lower-level groups to describe what they had learned in higher-level groups and obtain input. Good information as well as the most engaged representatives should filter through to higher-level groups, and the top-most group would summarize the best information and ideas of the larger public. In addition, the top-most group could interact with public officials.

### **HOW TECHNOLOGY CAN HELP**

Deliberative practitioners believe that good facilitation is necessary for deliberation, but given the potential size and distributed nature of rulemaking deliberations, we assumed that only an automated discussion facilitator would be feasible for an expanded e-rulemaking process. Given that government agencies have little budget to deploy human facilitators, as an alternative we sought existing technologies that together could perform some of the functions of a facilitator, particularly helping the citizens to engage with each other in an informed manner.

NLP technologies have progressed to a point where they are useful for a range of applications, such as answering questions (Strzalkowski & Harabagiu, 2006) and translating documents between languages (Nirenburg, Somers, & Wilks, 2003). With respect to digital government applications, NLP technologies are being developed and deployed that assist in a number of ways, including categorizing issues during a rulemaking deliberation (Cardie, Farina, Aizaj, Rawding, & Purpura, 2008) or attempting to summarize the contents of a completed discussion (Tigelaar, Akker, & Hiemstra, 2010). The objective of our project was to use established NLP techniques to assist in the ongoing process of a deliberation.

We developed the rudimentary components for an artificial discussion facilitation agent (DiFA) for the project. This agent is designed to (a) help participants quickly and easily learn about complex rulemaking background information (thereby helping to remedy the problem of poorly informed participants or unsophisticated participants); (b) help connect participants to those of like and dissimilar perspectives (to help with unique information-sharing and possibly minimize spiral of silence and lack of engagement); and (c) offer suggestions for new topics for potential discussion based on the conversation that has transpired thus far (to help limit spiral of silence and lack of engagement).

A key component of DiFA was the High-quality InTeraCTive Question Answering (HITIQA) system (Small & Strzalkowski, 2009). HITIQA was developed to aid

intelligence analysts in answering complex questions of unstructured data. It allows participants to query a database of information using full sentence, complex questions rather than key words. Complex questions are those where straightforward facts, or yes/no answers, are probably insufficient. For example, a question such as "What are the relationships between China and North Korea?" might touch on economic, military, or social factors. Expecting a single answer is unrealistic. The database is driven by NLP technology that allows users to ask a question as they would another human and to receive either a factoid answer or more typically a short explanatory paragraph extracted from one or more relevant documents returned as a result. For each topic of deliberation, we mine a large amount of relevant information from the Web, storing it locally after some basic pre-processing techniques, including a shallow semantic analysis we call framing. Although we store the information locally, HITIQA works equally well over the open Web, using Google's Application Programming Interface (API) to initially retrieve information. Local storage allows the system to perform faster, which is important given that we were restricted to 20 simultaneous connections to our database for the deliberative effort. Prior trials show that, when used to address complex questions, HITIQA outperforms traditional search tools such as Google in terms of time efficiency and cognitive load (that is, the number of questions necessary to be formulated and posed) when finding answers to questions. We therefore reasoned that HITIQA could be harnessed to help participants in rulemakings learn more about the often complex regulation and background material. The initial use for HITIQA was as a "pull" technology, to be used by participants prior to and during the deliberation, if there was information need. It was the most visible of our technologies.

Behind the scenes, another key component was our dialogue act classifier, CuDAC (Webb, Hepple, & Wilks, 2005). Dialogue acts (Bunt, 1994) are labels that characterize the function of each sentence in a discourse in terms of the role it plays, such as a question or a statement

of opinion. We would use an online message board system, described later, to host our deliberations, and our second hypothesis was that, in sizable deliberations, it would be hard for users to track all posts in all threads as the deliberation progressed. We resolved that one function of a facilitator would be to track the ongoing discussion and make sure that users who were talking about the same subject, only in different threads, were aware of each other. To connect participants together, we classified each sentence of each post with a dialogue act using the CuDAC classifier. CuDAC works by identifying *cue phrases* in text and speech. These cue phrases have been empirically selected and evaluated from a large corpus of human-human telephone speech, but have been positively evaluated over a range of disparate corpora (Webb & Ferguson, 2010). For example, we can identify statements of opinion (such as “I think that network neutrality is good”) and then use such statements to connect participants to those expressing opinions on related issues, building communities of deliberators. These communities are not necessarily like-minded, but are connected based on topical content using keyword overlap and synonym dictionaries such as WordNet (Fellbaum, 1998). We could also point participants to existing or new posts and threads in the ongoing deliberation that touch on subjects about which they post.

CuDAC and HITIQA can be combined to answer questions raised in posts to the message board. CuDAC can identify questions in user postings, which are then sent to HITIQA automatically and answered as a background process with the hope that the information returned will be useful to the ongoing deliberation. The questions in user posts are hyperlinked, leading to a pop-up page with the answers returned from HITIQA.

Finally, simple keyword techniques can be used as a means to identify current trends in the deliberation. If we have pre-surveyed participants, including a list of topics that centrally interest them, we can possibly identify issues that have not yet been raised and use these to prompt individual participants on new topics. By providing a daily e-mail update with new questions, links to posts and threads, and

synopsis of the topics of deliberation each day in the form of a word cloud of most popular words, we hoped to keep participants informed and engaged.

### ***THE DELIBERATIVE E-RULEMAKING (DEER) PROJECT RESEARCH DESIGN***

The plan of research was to conduct two rounds of pilot testing and then experiment with real rulemaking by government agencies. The pilot tests were conducted with undergraduate students at two universities in the United States on the topic of network neutrality, which is the issue of whether there should be government regulation of Internet service providers (ISPs) and backbone companies related to their ability to throttle Internet traffic, thereby treating some Internet traffic differently.

The pilot was meant to test some of the technology, in particular the HITIQA system, when applied to a rulemaking topic like network neutrality. We also sought to determine how readily HITIQA could be used by the general public, as opposed to trained information-seeking analysts, and how it could be made available for general access over the World Wide Web, both of which had not been done before. This entailed research and practical challenges (such as handling multiple, simultaneous queries in real time). It also was meant to test the deliberation infrastructure we had selected, which was the online message board system vBulletin.

The main project was to consist of several experiments conducted to contribute to actual rulemakings with involvement from federal agencies. The experiments were designed to begin simply but eventually achieve sufficient complexity to fully test our main hypothesis that our online deliberations of rulemaking topics, held without facilitation but with NLP technology, would show some of the positive impacts of professionally-done face-to-face deliberations with facilitation. The fully elaborated research design involved a 3X2 experiment: presence and absence of the NLP technologies crossed with standard small group deliberation, MLD, and control. The control participants would be asked to complete pre- and post-surveys and

access to information materials, but would not deliberate. They would, however, make standard rulemaking comments by posting their views without seeing those of others. By comparing outcomes among participants in the six conditions, it would be possible to discern the effects of deliberation, MLD, and NLP in contrast, for example, to standard rulemaking comment processes. Primary outcomes included objective and subjective knowledge of the topic, policy attitude change, and indicators of likely future engagement and changes in political interest and conceptions of citizenship. Deliberative discussion posts would be given to the agencies as public comments, plus participants would have an opportunity to write final summaries of their positions, which would be submitted as formal comments.

### ***BEST LAID PLANS: CHALLENGES AND OBSTACLES***

We encountered challenges throughout the research process. In the initial pilot testing, several issues arose. First, undergraduate students were disinclined to use the HITIQA tool (rebranded as “Your Questions Answered”), preferring instead to use a familiar search tool such as Google. It should be noted that the function of the tool was not highlighted to the students, nor were they required to use it. We made it available to them before and during the deliberation to ascertain if they would use it. They did not. Second, the students were generally not knowledgeable about the topic of network neutrality, nor were they particularly engaged, as evidenced by the short posts and lack of interaction among the discussants, which may have further minimized their inclination to use the “Your Questions Answered” tool to learn more about the topic and to participate more generally. Third, the students had trouble using the message board system. Many had never used a message board before, and they found the interface for posting and replying to messages confusing.

As we conducted our pilot tests, we contacted several federal government agencies to secure partnerships so that we could experiment with

an actual rulemaking. This proved a challenge. First, the project began near the end of President George W. Bush’s second term as president. Given that heads of agencies are executive-level government appointees, there are often changes in agenda and in focus that accompany a change of administration. Those spearheading efforts to enact rules under existing heads did not wish to slow down the rulemaking process underway on draft regulations for fear of having their effort stopped when a new agency director was appointed. There was concern that a deliberative project such as ours might slow down that process. Second, a surprising number of agencies only wanted to participate in the project if we could guarantee a desired outcome for the agency. In effect, they were looking to the deliberation as a way to steer the public towards a particular view the agency preferred, which violates basic tenets of deliberation (see Muhlberger, Stromer-Galley, & Webb, *in press a*, for a fuller discussion).

We then shifted our focus from federal to state agencies and found traction with New York State’s Department of Environmental Conservation (DEC). The agency’s Deputy Director was an advocate of promoting innovative ways to invite citizen input on their activities and policy initiatives, and he and others found our project in keeping with that philosophy. Second, the DEC found the project appealing given that we were asking only for some of their staff time and guidance, but not monetary or other resources.

We faced challenges in working with the DEC on planning the deliberation. The first was the legal uncertainty of an online deliberation as part of a rulemaking. In working with New York State, and in our conversations with federal agencies, there was much concern about the legality of holding an online deliberation to generate public comments. Specifically, New York State’s Administrative Procedures Act, Article 2, Subdivision 2 mandates that an agency must submit notice to the Secretary of State for the public announcement of the regulation for the public to comment during a standard period, usually 45 days. State agencies are required to make public a summation of the comments received, and explain how the regulation has

been revised to accommodate the comments or a justification for why changes have not been made from “significant alternatives” offered in the public comments. With that regulatory backdrop, it was unclear how posts made as part of a deliberation would be construed legally. Was each individual post a comment that would need to be included in a summary? How would others after the deliberation be able to make sense of these “comments,” which were once part of an ongoing conversation? How would agencies determine the views or “significant alternatives” from the conversation when such suggestions and views might be fragmented over several posts and when views of given participants might even change over the course of the deliberation? For agency staff we spoke with, these questions had no clear answers, would require clarification from a legal and procedural standpoint, and as such, became barriers for participation.

We resolved the legal problems by shifting the timing of the deliberation to an earlier stage in the regulation process at an earlier drafting or “findings” stage. This shift about when the deliberation would occur in the rulemaking process not only removed many of the most problematic legal questions, it also made it more likely that the product of the deliberation, the ideas, concerns, and feedback on the issue or problem the agency sought to remedy through regulation, would actually have some effect. As staff from various agencies explained to us, when a regulation is finally submitted for public comment, it is generally in its final form and feedback received from the public is unlikely to be incorporated in a re-drafting of the regulation. Put another way, staff are disinclined to make further changes to a regulation once it starts the public comment process. There is some irony in this position given that the presumed point of the public comment process is to give agencies an opportunity to consider the perspectives of stakeholders and those interested in the regulation, yet in practice, the opportunity for considering and incorporating changes is long past once the regulation is subject to public comment.

The second challenge we faced in working with the DEC was in selecting a topic or possible

regulation to subject to a public deliberation. We wanted a topic with a high likelihood of interesting a broad public, and one where the feedback received would be of use to the agency. DEC narrowed their considerations of topics to one involving changes they were making to their Environmental Assessment Form, a document that all individuals or businesses in the State must complete when they engage in any activity that requires oversight by a municipality. This form, which had not been updated in decades, had been through a round of revision, but needed further input given the revisions. This topic was not one that we considered would captivate the public’s imagination, but it was useful to the agency and it impinged on a broad array of stakeholders across the state, so we pursued the topic.

The third challenge came in the development of the deliberation on the topic. The DEC, like many state agencies in New York, has been significantly downsized since the economic recession of 2007–2009. As a result, few staff had time to work with us in collecting the materials, identifying stakeholders, drafting sample invitations to stakeholders, crafting survey questions, and the like. Although we brought technical and deliberation expertise to the project, we rely on the agencies to provide the preliminary background information and the knowledge of the topic so as to educate and assist us in ensuring that we are producing a high-quality deliberation. One lawyer at the agency had perseverance and found time to work with us and to bring in others at the agency at relevant moments to bring the deliberation to fruition, although it took nearly a year.

When the deliberation finally happened, we relied on the agency to identify stakeholders and to help recruit those stakeholders to participate. The DEC identified approximately 70 stakeholders, many of whom had staff and a network of people who also had an interest or a stake in the changes being proposed to the Environmental Assessment Form. Yet, only 53 people signed up to participate in the deliberation, and 14 provided comments on the regulation. Disappointingly for us, participants did not engage each other in much conversation on the proposed form. Our sense is that

the participants were used to the formal public comment process. As such, they provided their comment or feedback on the message board to the agency, but did not engage others on their comments. They also directed questions and comments directly to the agency, rather than to other participants or to the public in general. We should note that two DEC staff answered questions and also asked questions of participants in an effort to get useful feedback on the revisions.

In some ways, it was a failed enterprise. Relatively few people participated in the deliberation, which meant we could not test the DiFA technologies, nor were there enough people to conduct a MLD. In follow-up interviews with the staff at DEC, they noted that they received feedback from participants that the message board structure was off-putting and difficult to use, which further limited their involvement with the deliberation.

Yet, DEC staff told us that they would like to do another deliberation. They still believed in the value of the enterprise, even if this deliberation was relatively limited in terms of participation. Although few participants commented, raising some concern about representation of the stakeholder community, the comments were of use for the agency. As well, if the agency had held a public meeting to receive feedback, which they routinely do in pre-regulation drafting stages, they would have had modest turn-out and a similar number of participants speaking. So, in some ways, the feedback from the deliberation was not better but not worse than a more traditional in-person meeting.

In order to test the DiFA technologies, we conducted another deliberation with undergraduates on the network neutrality topic. For that round, we recruited over 600 students, of whom 184 fully participated. We altered the structure of the message board system to display a simpler presentation of the discussion, and we made further refinements to the Web site and the delivery of background information on the topic. We were able to experiment with MLD and with several of our technologies given the larger numbers of participants.

Results from this student study suggest that our online deliberative rulemaking process

did have the positive effects reported for face-to-face deliberations: policy attitudes changed significantly, objectively measured policy knowledge increased, and indicators of engagement and citizenship improved (Muhlberger, Stromer-Galley, and Webb, in press b). MLD significantly enhanced citizen identity and reduced authoritarianism. NLP technologies showed little effect. The small number of groups (11) we could form with the participants reduced the statistical power of our tests for impacts for the MLD and NLP conditions.

The students evaluated the MLD process as being somewhat useful. Although in the pilot students reported having trouble with the message board technology, in this round students reported that the message board was generally easy to use, and they were able to find information about the topic of network neutrality. They found the "Your Questions Answered" feature and the word cloud as somewhat useful, and they found the e-mail messages with links back to the discussion helpful.

Around the same time as the student deliberation, we had productive conversations with the U.S. National Parks Service (NPS). They were interested in receiving input from the public on the issue of lead that is introduced into the nation's public and private lands from hunting with lead shot and fishing with lead sinkers. They had been considering a formal regulation that would ban lead shot on public lands. On March 10, 2009, acting NPS Director Daniel Wenk issued a ban on the use of lead shot by parks personnel who cull sick or wounded animals in the parks (National Park Service, 2009). He also announced a goal of banning the use of lead-based materials in the parks by the end of 2010. That announcement was met with strong opposition from such groups as the National Rifle Association and the National Shooting Sports Foundation (Repanshek, 2009). The groups were especially critical that the National Parks Service had not sought input from gun and hunters advocacy groups, and had not subjected their plan to public comment (McDaniel, 2009). On March 18, 2009, Wenk issued a clarification that the NPS would look to transition to non-lead alternatives by working with and seeking input

from stakeholders and interest groups (Public Employees for Environmental Responsibility, 2009). Subsequently, staff members at NPS were tasked with identifying ways to minimize lead's introduction onto public lands, including voluntary and regulatory measures, and inviting public input on such measures. In that context, the purpose of our deliberation was to bring together stakeholders and the interested public and brainstorm ways to minimize lead on public lands through hunting and fishing activities.

In working with NPS, we faced challenges similar to those that we experienced with the DEC. We also had an additional problem, which was that of recruitment. The NPS, while interested in our results, did not wish to be named as a sponsor of the deliberation. The political climate around the topic is complex. Because the issue of lead-poisoning of wildlife species implicates ammunition, one of the solutions proposed by agencies and researchers is to ban lead-based ammunition. That proposed solution, however, raises a strong response from gun-rights and Second Amendment rights advocates who argue that federal agencies lack the jurisdiction to ban ammunition because such a ban encroaches on Second Amendment rights. Without their explicit partnership, we had to engage in the recruitment work, which we had neither budget nor personnel to fully mount. NPS provided us lists of stakeholders, which ranged from wildlife research and advocacy organizations, state Fish and Wildlife agencies, and environmental groups to hunter, sport shooter, angler advocacy groups, gun rights groups, and manufacturers of hunting and fishing equipment. We contacted those stakeholders through e-mail invitations we crafted and also tried Facebook and other social media ads, and posted invitations to relevant online groups. After some negotiation with NPS, we were able to include in our recruitment materials that their agency and other state and federal agencies were interested in the results of the deliberation. Our concern was that without an indication that the deliberation's conclusions or outcomes would be of interest to government agencies, people would not participate.

Although we had modest success in getting participants to sign up for the deliberation, few

actually posted to the message board. We contacted over 111 organizations, and 364 individuals were directly invited to participate—some of whom we contacted directly from the stakeholder lists from the NPS, and others of whom we were able to recruit through snowball sampling methods. Over 160 people signed up and 95 took a pre-deliberation survey, yet only 13 people posted to the message board. In a follow-up survey, we asked people who did not participate in the deliberation why they did not. Of the 35 responses on that survey, the most common responses were that they did not have time, or they could not participate because they represented a government agency. Other reasons included technical problems or not being able to figure out how to comment. A few participants indicated that they already agreed with what was said, and at least one participant felt in the minority and not able to change the view of the majority.

Because of the low participation rates, we could not test the MLD process. We made available our Question-Answering technology, and we sent periodic e-mails to all participants who had signed up to participate in the deliberation with a word cloud summary of frequently used words and hyperlinks to recent posts, in an effort to bring more people to the deliberation. Unfortunately, that effort failed, as evidenced by our low participation rates.

On the whole, participants' views were mixed with regard to the technologies we implemented. In the post-deliberation survey, we asked those who had logged in to the message board at least once, even if they did not post, what their thoughts were about the technologies. Although a majority of the respondents said they found the policy information they were looking for on our Web site, they did not use the "Your Questions Answered" tool to do so. Of those who did, only slightly more found it useful than not. The word cloud feature was, on the whole, found to be relatively useless. They were neutral on the utility of the e-mail messages we sent them; those who had an opinion found them useful.

With regard to the deliberation, participants were more positive. The majority of respondents on the post-deliberation survey who had logged on at least once to the message board reported

that they would participate in a future deliberation process. A majority of survey respondents who posted to the message board reported that their perspectives got a fair hearing from their fellow deliberators.

In a final wrinkle for the project, but one that government agencies experience frequently, we became the subject of a Freedom of Information Act (FOIA) request. The National Shooting Sports Foundation (NSSF), the hunting and gun rights advocacy group that was vocal following Director Wenk's announcement of the lead ban by parks' personnel in 2009, and one of the organizations we unsuccessfully invited to participate in the deliberation, sought all e-mail communication, reports, documents, data, and transcripts on the lead deliberation. They also submitted FOIA requests to the National Science Foundation and to the National Parks Service. Because the project is funded by the federal government and because we all are employed by public universities, we were legally compelled to respond to the request.

The reason NSSF had for making a FOIA request on the project, according to our contacts at the National Park Service, was that the NSSF was concerned that NPS was circumventing the regulatory requirements for a formal rulemaking and public comment process by hosting an online deliberation on the subject. Yet, from the perspective of the NPS, the deliberation to invite public comment before engaging in a formal rulemaking was in keeping with NSSF's demand that the NPS solicit stakeholders' and the public's input.

### **LESSONS LEARNED**

This project aimed to harness natural language processing and multilevel deliberation to experiment with and to improve e-rulemakings. The project faced considerable challenges in testing our methods—challenges that other researchers should consider if they are contemplating working with federal agencies in the future to help bring public input to policy activities.

Because the success of our project rested on establishing partnerships with government agencies, we faced considerable risk in being

able to test our theories and our technology. It was not until our final year that we secured partnerships or at least agreements with federal and state government agencies to experiment with our deliberative project. This increased willingness to work with us, we think, is due to the changing climate within federal and state governments to become more transparent and to actively invite the public to provide feedback on the policies the agencies are tasked with creating. The changed climate occurred following President Obama's initiative to require greater transparency in government. Nevertheless, future projects' success hinges on the willingness of government agencies to experiment. Establishing partnerships in advance of funding or having a longer project timeline increases chances of success.

Even after we secured partnerships (of sorts) with government agencies, we faced significant challenges with recruitment. The citizens we recruited proved neither knowledgeable nor interested enough to overcome the obstacles of time and attention to participate in an extended policy discussion, though it occurred online and at a time of their choosing. Even those who have a more direct stake in the proposed regulation found it challenging to participate in an extended deliberation. Participants for both the Environmental Assessment Form and lead in the environment deliberations were knowledgeable, motivated experts on the topic. Yet, finding the time to participate more than once was difficult for them.

One solution would be to incentivize ordinary citizens and stakeholders to participate. We experimented with incentives with the lead deliberation, giving out \$5.00 gift cards to any nongovernmental employees who had initially signed up to participate, with the hope that our "token of appreciation" would create a social exchange obligation to participate (Dillman, 2000). Yet, given the small numbers of people who participated in the deliberation, the incentive did not seem to work for such a time-intensive activity, although we note that response rates on our surveys were relatively strong, even on the post-deliberation survey.

Incentives, however, are problematic in the context of a rulemaking, even when in the

pre-public comment stage. Government agencies will not want to appear to be paying or “bribing” stakeholders or citizens to participate, nor do agencies have the budgets or the mechanisms to pay for feedback given heavily regulated government expenditures. Is it appropriate, however, to pay ordinary citizens for their feedback on a regulation? In an ideal political landscape, citizens would have the knowledge and inclination to want to provide useful feedback to government agencies on regulations that have direct and indirect effects on daily life. Yet, although we do not have that ideal political landscape in the U.S., paying citizens and stakeholders for their feedback is not feasible or appropriate. Thus, one of the realities of this project, and one shared with prior deliberation projects, is the relatively low numbers of people willing to take the time to participate.

One solution to this problem would be for government agencies and good government groups to cultivate social networks, in both traditional and online forms, identifying relevant stakeholders, developing networks, and increasing communication between government agencies, stakeholder groups, and those interested from the public. By developing a long-term community of interested citizens and stakeholders, with increased communication between them and repeated deliberative comment experiences, the likelihood increases for greater participation and input from citizens on agency regulations.

Another idea would be for the federal and state governments to establish clearing houses of public participation. By this, we mean a Web site hosted and maintained by the government for all relevant government agencies that indexed public participation opportunities that ordinary citizens and stakeholders could monitor, and then sign up to participate in regulations or policy discussions. Such a Web site would be another mechanism for government agencies to better publicize government activities, cultivate a community of interested citizens and stakeholders, and facilitate greater transparency and participation.

There are larger, structural forces that make e-rulemaking challenging. Federal and state governments need to clarify the legal

complexities that arise when inviting public comment through public deliberation. It became clear that holding an experimental public deliberation as part of the legislatively mandated public comment period had too many legal uncertainties to be acceptable for government agencies. The law must catch up with the practices that government agencies are experimenting with, especially in light of the Open Government Initiative, in order to further bring citizens and stakeholders into the policy conversation.

It is an important question whether deliberations are even appropriate once a regulation has been drafted and a legislatively mandated comment process started. As noted earlier, agencies tend not to make substantive changes to regulations based on the comments they receive. As such, a deliberation may be of greater utility when agencies are considering but have not yet drafted a regulation. The public’s input at earlier stages in the policy-drafting process would likely be given greater consideration and then integrated into the drafted regulation.

More importantly, state and government agencies must become more interested and willing to hear deliberative comments from the public. The Open Government Initiative establishes a new rhetorical landscape for government agencies to be more open and transparent. Yet in our experiences, one of the obstacles we routinely encountered when discussing our project with officials was a sentiment that comments from the public were burdensome and ill-informed. Officials were concerned that a deliberative project like ours would likely only lead to more work with seemingly little pay-off. Unless government officials come to see value in genuinely seeking comment from citizens, projects like ours will necessarily be limited.

Although we have little control over securing partnerships with government agencies, we have a ready-pool of potential deliberators in our college students. Although students are not an ideal population for deliberating on a somewhat esoteric topic like network neutrality, they can at least help us to identify what some of the promises and problems with the technology and the deliberative structure might be. Indeed, our research found that, at least among

these students, online deliberation of rulemaking topics in the absence of facilitation proved to have the same kinds, if not intensity, of positive effects researchers have found for face-to-face deliberation with professional facilitators regarding typical political issues (Muhlberger, Stromer-Galley, & Webb, in press b). It is also an important question whether deliberation experiments and projects on college campuses might promote greater interest and involvement with the actions of government among our next generation of citizens.

Finally, with regard to the Digital Facilitator with which we were experimenting, we were not able to fully implement and test our various technologies due to a lack of data. Thus, we could not examine how effective they were at improving some of the problems that deliberation invites. The encouraging news is that participants found what we deployed to be of modest utility, with the exception of the word cloud for the lead deliberators.

A pressing question for online deliberation is what platforms best facilitate a deliberation. We opted for an asynchronous message board because it affords longer, ideally more thoughtful posts and allows participants to read and write at times convenient for them. Yet, for our project, this increased convenience and longer posts had two consequences. The first was that there was not much genuine interaction and engagement among deliberators. The second is that for participants, the increased convenience did not facilitate greater levels of participation. Alternatively, other projects have opted for pseudo-synchronous chat forums (see, for example, Price & Cappella, 2002), where people must meet at a given time. The downside of such an environment is the shorter messages, the increased incoherence of the discussion, and the difficulty in scheduling times convenient for participants. The upside is that there is greater interaction and engagement, and even with the shorter messages, participants are still able to engage in fruitful discussion with positive outcomes (Price & Cappella, 2002; Price, Cappella, & Nir, 2002).

To conclude, we continue to believe there is significant value in utilizing deliberative techniques and harnessing NLP technologies to

facilitate public comment on proposed regulations by federal and state government agencies. President Obama's Open Government Initiative will drive more agencies to experiment with novel techniques for meeting the goals of greater transparency and collaboration with the public. Researchers must continue to experiment with processes and technologies, even in the face of the obstacles detailed in this article, to further connect citizens to their governments and vice versa. Through experimentation, we can identify best practices and narrow in on effective mechanisms.

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