

Final Report for Period: 01/2001 - 07/2002

Submitted on: 01/10/2003

Principal Investigator: Hamlett, Patrick W.

Award ID: 0080810

Organization: North Carolina State U

Title:

A Quasi-Experimental Comparison of Face-to-Face and Internet Delivery in Citizens' Consensus Conferences

Project Participants

Senior Personnel

Name: Hamlett, Patrick

Worked for more than 160 Hours: Yes

Contribution to Project:

Hamlett's contributions include recruiting graduate student assistants, recruiting facilitator, recruiting Oversight committee, recruiting citizen panelists, assembling citizen panels, recruiting content experts, scheduling both face-to-face and internet-only citizen meetings, locating and scheduling meeting facilities for the face-to-face and the control panels, reviewing and editing the background materials, design of the pre- and post-test instruments,

Name: Miller, Carolyn

Worked for more than 160 Hours: Yes

Contribution to Project:

Miller's contributions include recruiting graduate student assistants, CISS staff support, design of the pre- and post-test instruments, organize and administer the graduate seminar responsible for developing the background materials provided to citizen panelists, and analysis fo data.

Name: Macoubrie, Jane

Worked for more than 160 Hours: Yes

Contribution to Project:

Macoubrie's contributions include recruiting the facilitator, identifying and negotiating the acquisition of FacilitateÖ software, organize training in the software, organize the video and audio taping of conference meetings, organize the transcription of the audio/video tapes, train RAs in transcription and coding, analyze coded results, working with the facilitator to adapt the software to the demands of consensus conference deliberations, and mapping the conference process onto the software components and participants' capabilities.

Post-doc

Graduate Student

Name: Prosseda, Kathleen

Worked for more than 160 Hours: Yes

Contribution to Project:

Served as lead graduate student assistant to PI. Helped with organizing all face-to-face meetings, assisted facilitator with both face-to-face and internet-only sessions, assisted with transcriptions and data analysis

Name: Hollis, Amanda

Worked for more than 160 Hours: Yes

Contribution to Project:

Assisted with the development of background materials, with all face-to-face and internet-only sessions, and with transcriptions

Undergraduate Student

Technician, Programmer

Other Participant

Name: Francesconi, Robert

Worked for more than 160 Hours: Yes

Contribution to Project:

Francesconi served as the facilitator for both consensus conferences. This involved convening and conducting all of the F2F and K2K sessions. His tasks involved assuring the smooth operation of each session, attending to the flow and development of discussions and deliberations, watching for participation by all citizen panelists, helping the group move from diverse perspectives to commonly-endorsed final language, assisting the citizen panelists in assessing the background information, managing each group's interactions with content experts, and assisting in the writing of the final report. In the case of the K2K conference, these tasks involved the development of a variety of group instructions (with Macoubrie) and facilitator moves in advance of each synchronous session, so that he could cut-and-paste those instructions as needed during the flow of discussion. He also posted the post-test questionnaires for the K2K group.

Research Experience for Undergraduates

Organizational Partners

Other Collaborators or Contacts

Various content experts, recruited from NC State faculty, government offices, and local community groups

Activities and Findings

Research and Education Activities:

We conducted two versions of the Danish Consensus Conference in Raleigh, North Carolina, one in the traditional face-to-face (F2F) mode, one conducted entirely on the Internet (K2K: keyboard-to-keyboard). This was the first time that a Danish-style Consensus Conference has been conducted entirely on the Internet. While both panels examined the same issue (genetically modified foods), both received the same set of background materials, and both groups interacted with the same set of content experts, each group deliberated to its own set of policy recommendations and did not interact with each other. Both panels also completed identical pre- and post-test questionnaires, and members of each group participated in post-test interviews concerning the experience. In addition, we assembled a control group which completed the pre- and post-test questionnaires, but did not otherwise participate.

Carolyn Miller led a graduate seminar in the Technical Communication program, which developed the background materials provided to each citizen panelist. These materials included a 56 page summary of the issues surrounding genetically modified foods, along with a large selection of government, academic, corporate, activist, and journalistic reports on genetically modified foods. The summary was vetted by the Oversight Committee, to insure that it was a) technically accurate, b) balanced, and c) accessible to non-specialists. The research team then reviewed the summary in minute detail, working to eliminate any remaining partisanship.

Jane Macoubrie and our facilitator, Dr. Robert Francesconi, worked to integrate the software package Macoubrie found, FacilitateÖ into the internet-only (K2K: keyboard-to-keyboard) process. In conjunction with this, our RA Amanda Hollis worked with Shannon Magee, our web developer, in creating a web site for the K2K participants. This web site contained general information about the consensus conference process, brief bios of the participants, the schedule for the internet discussions, html versions of all background materials, and a link to the FacilitateÖ program where the deliberations would occur. The web site is still available for review at <http://www2.chass.ncsu.edu/forum/>.

Patrick Hamlett, and RA Kathleen Prosseda, recruited the citizen panels. Advertisements were placed in local newspapers seeking volunteers. 162 individuals responded, each of whom then filled out an initial questionnaire to determine the individual's gender, age, educational attainment, and ethnicity. In addition, each was asked to specify whether he/she was employed by, or invested in, a business involved in the genetically engineered food area, whether any members of the immediate family were so employed or invested, or if the individual were an active member of an advocacy group that had taken a position on genetically modified foods. Any such individuals were excluded from the study. Hamlett also recruited both the Oversight Committee and a slate of content experts.

The F2F events occurred on the NC State campus, involving three weekends, about one month apart. During the first session, the participants became acquainted with each other, with the research staff, and with the general consensus conference format. During this weekend, the participants were encouraged to raise any concerns or issues they, individually, thought worthy of group consideration. When these concerns were collated, the group was told its short term task would be to consider the various concerns raised in the light of the background materials

they had received, and to generate a set of follow-up questions they wanted to put to the content experts who would be available during the final weekend. After a three week break, the F2F panel met for the second weekend, intending to complete the task of considering the group's concerns about genetically modified foods and clarifying the additional information they wanted to obtain from the content experts.

The K2K group 'met' virtually during this same time period. To overcome the problems of video fatigue, the K2K 'weekend' was extended over a ten day period, during which there were three two-hour synchronous sessions. The synchronous sessions were spaced two or three days apart, with asynchronous communication between. The facilitator worked on a variety of scripted instructions, to be cut-and-pasted into the on-line discussion as needed, intended to expedite the time-limited synchronous sessions while still allowing the participants, themselves, to set the agenda.

Because the two hour synchronous sessions dramatically constricted the working time for this group, when compared to the F2F group, we solicited individual concerns and issues prior to the first synchronous session. This allowed us to present the K2K group with a collated list of concerns at the first internet session.

Like the F2F group, the K2K group was encouraged to consider the issues raised by various panelists, how these relate to the information provided in the background materials, and what gaps in information the K2K group wanted the content experts to fill. The K2K group also moved toward a common set of questions for the content experts.

During the final weekend, both the F2F and the K2K groups interacted with the same set of content experts. The experts had been provided with the specific questions each panel developed, experts being assigned questions in their specific areas of expertise. They were asked to prepare written responses, which were provided in hardcopy to the F2F panel, and posted on the website for the K2K group. The experts met with the F2F panel, where they presented their individual answers, answered follow-up detail questions, and -- collectively -- engaged in an open-ended question-and-answer session. This took up the entire first day, and half the second day of the final weekend. They also joined the K2K panel online, where they responded to specific, detailed questions posed by the panelists, as well as engaging in an open-ended Q/A synchronous session.

When the interactions with content experts concluded, the F2F panel moved on to its deliberations. The panelists, with the assistance of the facilitator, worked to develop a common set of policy statements, goals, and recommendations. These were written in a report that explained the panel's reasoning about genetically modified foods, and why the specific recommendations were developed. This effort required an additional session beyond the original three days.

The K2K panel also worked toward a common set of policy recommendations during three two-hour synchronous sessions, augmented by asynchronous communications between the live sessions. The recommendations were included in a report that detailed the panel's concerns and values. This, like the F2F group, required over-time efforts by the panelists.

Both panels completed a set of learning and attitude questionnaires, along with a control group which did not otherwise participate in the consensus conference. The learning questionnaire was intended to capture how much content mastery each panel achieved, while the attitude questionnaires were intended to assess the degrees to which initial participants' attitudes (trust and self-efficacy) changed during their participation in the process.

The F2F sessions were video and audio taped, and the tapes were transcribed for analysis. The K2K discussions were automatically archived by the FacilitateÖ software. These materials are in the process of being coded for discussion logics analysis. In addition, RA Prosseda conducted a sample of participants in postmortem surveys and focus groups, to assess participants' perceptions of the process and their experiences.

Findings: (See PDF version submitted by PI at the end of the report)

Training and Development:

All three PIs received training on FacilitateÖ software, both RAs received training in text analysis coding and transcription. The students enrolled in PI Miller's graduate Technical Communication seminar received training in the development of the background materials.



Outreach Activities:

Conference Presentations

Hamlett (2002)

Trust, Accountability, and Citizen participation: Implementing the Danish Consensus Conference on the Internet. Presented at EASST 2002, the annual meeting of the European Association for the Study of Science and Technology, York, England, July.

Hamlett (2002)

Enhancing Public Participation in Participatory Public Policy Analysis Concerning Technology: A Report of Two Danish-Style Consensus Conferences. Presented at the International Summer Academy on Technology Studies: Technology and the Public, Deutschlandsburg, Austria, July.

Hamlett (2002)

Adapting the Internet to Citizen Deliberations: Lessons learned. Presented at the IEEE International Symposium on Technology and Society, Raleigh, North Carolina, June.

Hamlett (2002)

Citizens' Consensus Conferences: Learning and Public Confidence. Presented at the annual meeting of the American Association for the Advancement of Science (AAAS), Boston, February.

Macoubrie, J (2002).

Understanding the public: Logics and technology policy. Proposed presentation to International Communication Association, submitted November 1, 2002.

Macoubrie, J. (2002).

Citizen technology-mediated policy deliberation. Proposed presentation to International Communication Association, submitted November 1, 2002.

Macoubrie, J. (2003)

Internet-mediated deliberation and structured group processes. Accepted for presentation at American Association for the Advancement of Science, Denver, February 2003.

Macoubrie, J. (2002).

Models of decision-making in technology policy. Presented at Boston Museum of Science, Technology Symposium, November 2002.

Macoubrie, J. (2002)

True Deliberation in Technology Mediated Group Communication. Presented to IEEE International Symposium on Technology and Society, Raleigh NC, July 2002.

Macoubrie, J. (2002)

Citizen logics and technology recommendations: Changes after participatory deliberation. Presented to American Academy for the Advancement of Science (AAAS), Boston, February 2002.

Miller, Carolyn (2002)

Trusting the Experts, Online and Off. Presented at the IEEE International Symposium on Technology and Society (ISTAS'02) Social Implications of Information and Communication Technology, Raleigh, NC, June 6-8.

Refereed articles

'Democratic Deliberation and Technology Policy,' Hamlett, Patrick W.; Jane Macoubrie; Carolyn R. Miller. In preparation.

Journal Publications

Books or Other One-time Publications

Hamlett, Patrick W.; Jane Macoubrie; Carolyn Miller, "2001 Citizens' Technology Forum on Genetically Modified Foods", (2002). Center Special Report, Published
Bibliography: Special Report, Center for Information Society Studies, North Carolina State University

Web/Internet Site

URL(s):

<http://www2.chass.ncsu.edu/forum>

Description:

This is the site at which the internet-only consensus conference was held. It contains both the face-to-face and the internet-only consensus conference reports prepared by each group of citizens, the questions each group posed to the content experts, and all of the background materials both groups received. It is intended as a resource for individuals and groups who may have an interest in genetically modified foods, and would like to know what two groups of average citizens concluded after carefully considering the technical information and policy implications of this technology.

Other Specific Products**Contributions****Contributions within Discipline:**

For the PI, the project involved empirical evidence gathering in the Political Science fields of a) deliberative democracy and b) participatory public policy analysis. Within the deliberative democracy community, the most extensive work has been in theory development, with relatively little empirical grounding. By basing this study in deliberative theory, especially claims that public deliberations work to shape and change initial preferences, we have been able to assess the extent to which participants' comprehension, preferences, and attitudes are moved by the experience. The participatory public policy analysis, while presenting more extensive empirical findings than the deliberative democracy subfield, contains little experience with the Danish consensus conference model (at least within the American literature). Our study helps to fill this gap. Most importantly, the execution of the first-ever Internet-only Danish Consensus Conference is ground-breaking in its linkage between theory and practice, and in its use of internet-mediated communication technology to enhance public discussion. Much of the political science literature dealing with internet democracy has dealt with information access and facilitating preference communication. It has not dealt at any length with processes of preference formation, which the consensus conference process permits.

For the Co-PIs, the project allowed the application of decision-logic methods (typically used in jury studies) to a new field (public policy deliberations by non-expert citizens). The communication literature treats deliberative practices, such as the Danish consensus conference, as a form of small group communications. This study elaborates existing communication theory and breaks new ground in the application of decision logics to public policy formation. Shifting to the internet-only format creates the opportunity to develop and extend decision-logics methods to a new domain.

Contributions to Other Disciplines:

For the PI, the project extends his engagement with the theoretic debates with the field of Science, Technology & Society, specifically by drawing linkages between those debates and the existing Political Science literature in deliberative democracy and participatory public policy analysis. Within STS, most analyses of the development of new technologies treats the preferences of interested parties as, essentially, fixed and unchanging. Our study, rather, deconstructs the notion of fixed preferences, examining in detail how those preferences are formed and, more importantly, how they are changed over time and as a result of exposure to the preferences of other participants. This study works to expand the reach of social constructivist studies of technology by bridging the gap between empirical and normative analyses.

For the Co-PIs, technical communication and political science are external fields most impacted by the research project. Especially important is the adaptation of *internet-mediated communications* to jury-level public deliberations.

Contributions to Human Resource Development:

Because the Danish Consensus Conference process brings non-expert citizens into informed and in-depth discussions with scientific and technical experts, it provides a significant opportunity for content experts to a) bring the latest results of research to the general public, and b) requires content experts to examine the larger moral and social implications of the research they conduct. The significance of this extends to many issues of public scientific literacy, public acceptance of technological change, and public confidence in scientific expertise. By giving scientists an opportunity to engage in in-depth discussion of specific technology issues with groups of average citizens who have studied the issue at length, scientific experts can have confidence that their testimony is understood by the citizens. Further, it allows a set of informed citizens to bring issues and concerns to the attention of expert groups, which may serve as a kind of anticipatory technology assessment, alerting experts who are involved with the technology of potential pitfalls in the development of the technology.

Contributions to Resources for Research and Education:

The internet-only element of this project will contribute significantly to information transfer techniques and resources between expert and non-expert communities. Most particularly, the internet allows for a much wider participation by ordinary citizens in the assessment of new technologies (assuming that 'internet divide' issues are effectively addressed). Public perception of science and technology can also be enhanced by the creation and maintenance of web sites containing the results and resource materials of completed consensus conferences.

Contributions Beyond Science and Engineering:

The project (the first of three stages planned) contribute directly to a) overcoming public understanding of science problems, b) creating a

context of trust and information exchange between experts and non-experts, and c) overcoming the 'democratic deficit' model of expert and non-expert communication patterns. By adapting the existing Danish consensus conference to the Internet, the project can assist interested citizens in making informed contributions to the general public discourse about science and technology, as well as specific policy recommendations to policymakers and regulatory authorities. The consensus conference process overcomes the public's information deficit, by bringing well-developed, balanced, accurate, and accessible background information to citizen participants, and by facilitating informed questioning of experts in the field. This will enhance the public sense of 'being heard' on important, but scientifically and technologically complex, issues.

Categories for which nothing is reported:

Organizational Partners
Any Journal
Any Product

Goals and Objectives of the Prior Exploratory Project (Study I)

This research team, Drs. Patrick Hamlett (PI), Jane Macoubrie (Co-PI) and Carolyn Miller (Co-PI), received \$145,000 from the NSF SDEST program for January 2001-December 2001. The funding supported exploratory research to conduct two North Carolina Citizens Technology Forums, a F2F (face-to-face) and K2K (keyboard-to-keyboard) Danish-model Consensus Conference on technology policy (genetically modified foods, in this case).

Goals of the 2001 Study 1 project were to 1) test the feasibility of US use of the Danish model; 2) test feasibility of a solely Internet-mediated version of the conference; 3) answer research questions concerning changes in citizen trust, efficacy or confidence, and content learning as a result of participation; 3) discover any differences in the latter between the F2F and K2K conditions; and (4) analyze the citizen logics leading to their policy recommendations. We have disseminated our results broadly, both as a report of the citizens' recommendations given to North Carolina policy makers, releases to local press, in papers given at various conferences, and in articles in various publishing stages at several journals.

Results: Citizen Outcome Variables

*Trust, in Study I, was measured both as a global variable, overall trust; trust of specific groups involved in technology policy was also measured. Overall trust change was measured, then, as well as decomposed into trust in regulators, scientists, and the biotech industry. Separate analyses were conducted on each of the latter. Table 2.1, below, is not a complete report of all statistics, but reports only the findings related to the current proposal.

Table 2.1 Results of Prior NSF Support

Learning F2F and K2K groups showed the same significant difference in learning	<i>p</i> = .000
Trust* F2F overall trust change was significant F2F trust in regulators significantly increased K2K overall trust did not significantly change K2K group decreased overall trust -.01 K2K did not significantly increase trust in regulators K2K did show a nearly significant increase in trust in the biotech industry over the control group; the F2F group did not	.02 .02 .06
Confidence F2F or K2K participants did not make significant gains in efficacy F2F and K2K groups were not significantly different in gains in efficacy	
Logics Analysis showed a definite logic did develop; it will be illustrated below	

Results: Citizen Logics and Recommendations.

Logics utilized by the citizens were analyzed using decision logics theory. Essentially, the analysis discovers the overarching argument or the argumentative case leading to the citizens' recommendations: the major issues, propositions or conclusions about them, and the underlying justifications such as facts, values statements, principles, personal experience, etc. Notably, the U.S. citizen recommendations are very similar to those resulting from 3 consensus conferences on GMOs in Australia, Canada, and Denmark . For the K2K panel, a distinctive set of global issues and propositions were present and logically lead to the citizens' conclusions, i.e., formed a decision logic. The panel argued for its recommendations in this way: 1) *The U.S. public should have a choice.* 2) *Labeling is necessary for choice.* 3) *The agriculture system should not be compromised.* 4) *Ecosystems require protection.* 5) *Big holes exist in the regulatory system.* 6) *Whether the current situation is high risk is debatable, not known.* The most

dominant issues are those presented first in the propositions, which are given above in their decreasing frequency: public choice, labeling, agriculture system protection, ecosystem protection, regulatory holes, and unknown risk. This set of propositions is a convergent rather than a dependent logic, as the latter propositions do not follow from earlier ones.

Change in the dominant issues and justifications used as a result of participation was also found: By the end of the conference, *regulating risk* had also replaced the topic of general risk. As well, of the 8 possible types of justifications that can be coded as part of decision logics, *material facts* and *pragmatic principles* dominated the citizen panel's discussion. *Facts* were the dominant form of justification throughout. But *pragmatic principles* related to regulating risk also subordinated simple principles by the end of the deliberation. Had the citizens concluded the risk was high, the logic likely would have been dependent on that conclusion, but that is not the case here. Instead, the risk was viewed as uncertain, as debatable, so it does not drive the logic. As would be predicted by the group of propositions made above, the recommendations made by the citizen group reflect their concerns: regulatory provisions for methods of testing GMFs, long-term tracking and monitoring, and the provision of public information on regulations, GMOs and GMFs. [Analysis of the F2F logics and comparison of K2K and F2F is in progress and will be completed during Fall 2002.]

There were no significant differences in changes in overall trust between the F2F and K2K. It is interesting, though, that the F2F changed in a positive direction (+0.2) while the K2K changed in a negative direction (-0.1) but the differences between the two groups were not significant. The F2F did have a significant difference between pre- and posttest measures of overall trust. K2K did not.