

Attitude Change in Face-To-Face and Online Political Deliberation: Conformity, Information, or Perspective Taking?

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ABSTRACT: Theorists of deliberative democracy maintain that deliberation can alter political views by providing new information and by exposing participants to alternative perspectives. Prior research has shown that deliberation often results in substantial attitude change. Published studies, however, do not effectively separate the effects of reading policy briefs from the effects of discussion, nor do they explore conformity or perspective taking effects. This paper examines data from a representative sample of 568 Pittsburgh residents, who came to a one day deliberation experiment. All participants received and had time to study detailed information about the project topic. They were divided into online discussion, face-to-face discussion, and no-discussion control groups. OLS with group-robust p-values indicate that reading materials and not discussion resulted in much of the change in policy attitudes, though face-to-face discussion had some effects. Discussion did have powerful effects in shifting individual attitudes toward their post-discussion group mean. This diverges from conformity research, which predicts polarization to pre-discussion group means. Analyses also find evidence for effects of perspective taking and knowledge, but not conformity.

EMAIL: peter.muhlberger@gmail.com **CONFERENCE:** Paper prepared for the 2005 Annual Meeting of the American Political Science Association, Sept. 2005, Washington, DC. **KEYWORDS:** Attitude change, democratic deliberation, perspective taking, conformity, political knowledge, attitude polarization.

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A Note to the Reader: Because data analysis took longer than expected, this paper is quite preliminary and should not be quoted. Please contact me at peter.muhlberger@gmail.com for future versions of this paper.

Modern democracies face many difficult issues that require informed and community-minded public input. The United States faces issues such as global warming, the balance between civil liberties and counter-terrorism, and looming energy and health care crises. Addressing these problems would likely require input from an engaged and concerned public. A wealth of political science research, however, suggests that the preponderance of citizens are breathtakingly uninformed and unsophisticated with respect to politics and policy issues (Kinder 2002; Neuman 1986). Even slight amounts of information can radically change the public's choices over consequential issues such as crime and foreign aid (Gilens 2000).

Social scientists, citizen groups, journalists, political leaders, and even federal agencies have come to embrace a variety of citizen deliberation practices to help create more informed publics to address difficult issues. For instance, James Fishkin and Robert Luskin have held over 20 substantial "Deliberative Polls™" worldwide, in which a representative sample of a population are provided policy information and come together to deliberate in small groups, question experts, and vote on policy questions. They have held events representing the population of Texas, the United States, Britain, Australia, and other countries to address such issues as energy policy, public health care rationing, crime and punishment, and whether Australia should become a republic (McLean et al. 2000; Park, Jowell, and McPherson 1998). In the case of energy policy, citizen deliberations persuaded the Texas utility commission to develop more extensive

wind power generation. In Puerto Alegre, Brazil, the city's budget is set through citizen deliberations. In British Columbia, a deliberative citizen's assembly weighed in on the issue of what type of representation system the Province should adopt for the future. In the American context, organizations such as Public Agenda, America Speaks, Study Circles, the Kettering Foundation, Web Lab, e-thePeople, and many others have held hundreds of deliberative discussions, face-to-face and online. Policymakers have adopted deliberation in a multitude of settings, from juries to town hall meetings.

Research on deliberation suggests that all of this effort may have benefits. This research firmly indicates that deliberation enhances knowledge of the topic being discussed and changes people's opinions (Price and Cappella 2002). The focus of Fishkin and Luskin's research has been whether Deliberative Polls™ enhance policy-relevant knowledge and changes opinions, something they have found to be the case in the majority of their deliberations (Fishkin, Iyengar, and Luskin 2005; Luskin, Fishkin, and Jowell 2002; McLean et al. 2000). Often, these opinion changes are in the direction of the expert opinion to which participants have access during the course of these projects.

What accounts for opinion change during deliberation, however, has not been so firmly established, and therefore various hypotheses about the mechanisms of such change deserve consideration. If deliberative proponents are correct, deliberation may benefit the body politic by helping inform opinions and by another key process—perspective taking. Thus, deliberation may change attitudes not merely by imparting information but also by enhancing perspective-taking. Theorists such as Mill (1996), Mead (1962), and Habermas (1984) contend that public discussion will create citizens that are more community-minded. In these theories, people are intrinsically

social and therefore the consideration of social needs in the course of deliberation can stimulate broader social perspective-taking and therefore community-mindedness. Habermas contends, furthermore, that public discussion will help expand people's perspectives by confronting people with opposing views (Warren 1995). He believes that public discussion is one of the few social settings in which people feel motivated to confront views they believe are socially deleterious.

If the opinion effects of deliberative experiences merely reflect information gains that can be obtained through reading materials, then it may be beneficial to rethink time-consuming and expensive deliberations. Perhaps citizens would make the same opinion changes were they simply to read suitable policy information. Of course, part of the battle may be to get people to read such information, and deliberation may be a powerful tool to motivate such reading. But, if opinion changes are wrought primarily by information, then it may be worthwhile to explore alternative or means of motivating the public, as will be discussed in the conclusion.

While deliberative theorists have hopes that deliberation will affect people through information exchange and perspective-taking, social psychologists have long studied opinion change in small groups from a theoretical framework emphasizing something more negative—conformity and polarization processes. According to this research (Petty, Wegener, & Fabrigar, 1997; Spears, Lea, & Lee, 1990), the opinions of group participants typically converge to a point somewhat more extreme in the direction of the original pre-discussion group mean. Groups with pre-discussion opinions that are somewhat negative will converge on a somewhat more negative view and vice versa. This polarization can be explained as a product of several processes. American social

psychologists suggest that conformity processes may be at work. People expect positive rewards for agreeing with the group. Also, to the extent that people in the group toe the group line, this will limit the pool of arguments available to individuals, thus nudging opinions toward the group mean. European social psychologists (Spears, Lea, and Lee 1990), in contrast, suggest that groups exercise their opinion effects by priming a given social identity in participants. The social identity regulates the perspective from which participants make decisions, perspectives that bring to the fore common values and norms that result in opinion convergence.

Social identity effects on opinion polarization may be especially prominent in online contexts in which participants have been reminded of their group identities. Spears and his colleagues (Lea and Spears 1991; Postmes, Spears, and Lea 1998; Spears, Lea, and Lee 1990; Spears et al. 2002) find that in online contexts in which participants are visually anonymous and reminded of a common group identity, opinions polarize more strongly than in situations without the group identity reminder or in face-to-face contexts. They hypothesize that people who are visually anonymous are not reminded of their individual identity by the gaze of others, which has powerful behavioral and psychological effects in research on self-focus (Carver and Scheier 1981) and accountability (Tetlock 1992). In the absence of reminders of their individual identities, people become more susceptible to whatever identity is primed, including group identities. Sunstein (2001) makes a great deal of the Spears et al. findings, speculating that the Internet will lead to an excessive and societally dangerous degree of opinion polarization.

While prior research firmly establishes that participation in a deliberative experience generally leads to significant changes in the policy attitudes under discussion, it does not fully explore the underlying causes of these changes—to what extent they are due to information, perspective taking, or conformity of various stripes. The design of much of Fishkin's and Luskin's research on Deliberative Polls™ does not involve an information-only control group, which creates difficulty determining whether participants' views changed because of their information materials, their discussion, or the time they had to consider the information during the course of their day or two of deliberation. Even if this research were to include a control group, problems would remain. If this research were to follow the earlier design of letting participants read information material at home, it does not adequately test the impact of information because it would be unclear how many participants actually read material at home and for how long. The effects of perspective taking and conformity need to be further explored as well, by introducing variables that can measure such effects and examining whether discussion mediates these variables.

This paper examines deliberative attitude change among 568 Pittsburgh residents who came to a one-day deliberation experiment at Carnegie Mellon University focused on the issues of public school consolidation and quality. This experiment was designed to separate the policy opinion effects of reading material information from the effects of discussion. One-third of the participants were placed in an information-only control group. All participants were given two 40-minute sessions during the day to read from core and extended information materials, insuring that all participants had an opportunity to read the materials. Much of the pre- to post- change in policy attitudes resulted from

the policy reading materials. While some effects were found for face-to-face discussion, the strength of the impact of reading materials suggests the possibility of different approaches to informing citizens. Discussion did powerfully shift individual attitudes toward their discussion group mean, though this did not translate in most cases to overall mean changes nor into evidence for polarization. Deliberation may have served a crucial role in motivating people to come and read the policy materials in the first place. Analyses also find evidence for effects of perspective taking and knowledge, but not conformity.

Hypotheses

The research reported in this paper involves a 3X2 experiment. Three media conditions (face-to-face, online, and no discussion) were crossed with a reminder of group identity (reminder / no reminder). For the group identity reminder, people were divided into a group that received no reminder of their citizenship and a group that received several reminders of their citizenship. These reminders include a flag in participants' rooms, the word "Citizen" in front of their name on their name tags and screen names, and a brief video before their discussions in which they were asked to use the discussions to determine how their choices might affect the community. In the non-reminder condition, participants received a brief video instructing them to use the discussions to learn more about the issues. How might policy opinion change relate to these conditions and to variables measuring perspective taking and conformity?

Research on Deliberative Polls™ suggests that either or both face-to-face (f2f) discussion and information from policy reading materials should significantly change mean opinions. Deliberative Polls™ do not intentionally remind participants of their

citizenship. Thus, this research suggests that the f2f discussion without the citizenship reminders would be the place to look for a positive effect. As described earlier, research by Spears et al. suggests that the strongest impact of a group identity reminder would be felt in online discussion. A primed citizenship identity should focus people on making decisions that are good for the community. On several of the issues under discussion, experts are either unanimous or in strong agreement regarding on the most community-beneficial position. Consequently, a primed citizenship identity should help move mean opinions on these issues. The strongest effect of citizenship identity on policy opinions should be in the online condition. Also, this context should manifest the greatest degree of polarization—that is, opinions gravitating toward the mean pre-discussion opinions of each group. These hypotheses are contingent on the external validity of the Spears et al. research. This research depends on highly controlled experimental settings in which participants interact for short periods of time and are not allowed to use each other's names, thus minimizing the possibility of individual identity becoming activated. The current experimental context is not so tightly controlled and more closely approximates interactions on the wild Internet. The following hypotheses are suggested:

H1: Information from policy reading materials should significantly change mean opinions.

H2: Face-to-face discussion, perhaps in the absence of citizenship reminders, should significantly change mean opinions.

H3: If the Spears et al. research on the deindividuating effects of online discussion generalize to more natural online contexts, online contexts with citizenship reminders should significantly change mean opinions.

H4: (Online polarization hypothesis) If the Spears et al. research generalizes, the online context with citizenship reminder should show the most powerful effects of mean pre-discussion group opinion on post-discussion individual opinion.

Depending on the design of the deliberation, certain conformity effects might or might not play a role. In the design used here and in the Deliberative Poll™, participants' concluding opinions, the outcome of the deliberation, are measured by an individual poll that is not shared with other participants. Also, participants are not members of the same community or social networks outside the deliberation. These features should eliminate conformity driven by expectations of positive rewards in future interactions. They should also dampen conformity due to a limited pool of arguments as participants toe the group line. On the other hand, when participants come together as community members, they may feel normative pressure to be agreeable, which may limit the pool of arguments and thereby result in converging opinions. That is, the social identity of citizenship may evoke norms of discussion that limit disagreement.

Private self-consciousness may help people resist the conformity pressures of limited disagreement. Private self-consciousness is the disposition to maintain a private, internal conversation about what matters to personal norms and standards, even in the midst of group interactions. Prior research shows that private self-consciousness correlates significantly and negatively with conformity with group opinions (Carver and Scheier 1981).

Social identity may exercise more general effects than simply limiting the pool of arguments. By taking the perspective of other participants in their group, the common

social identity evoked focuses attention on common values and standards and may thereby result in convergent opinions. On the other hand, perspective taking of a broader variety could result in rather different outcomes. If participants take a broad societal perspective rather than simply the perspectives of other group members, the result may be greater movement of their opinions toward positions experts identify as socially beneficial. This may take the form of convergence toward the group mean, if information from the group persuades the participant regarding what is most socially beneficial. If it does not, such perspective taking might take the form not of convergence but of a mean change toward the more socially beneficial view.

This paper will examine two measures of perspective taking—socio-political empathy and naïve realism—that may respectively embody broad societal perspective taking and more group-driven perspective taking. Socio-political empathy was measured by questions derived from the perspective taking subscale of the Interpersonal Reactivity Index (Davis 1985), a measure of interpersonal empathy. Questions were modified to capture perspective taking that matters politically or societally. Participants were asked to what extent they try to understand the viewpoint of people in other social classes and racial groups. These questions should tap societal perspective taking.

Naïve realism (Ross and Ward 1996) is an incapacity to understand political disagreement because of an inability to take the perspective of the dissenter. Naïve realists see their own perspective as self-evident and those of dissenters as incomprehensible. Consequently, they rationalize disagreement as due to lack of effort by dissenters or due to their irrationality or ill-intent. Naïve realism is measured by the presence of these rationalizations. While naïve realists might on first thought be assumed

to always be contrary to group positions, this may not be the case. Naïve realism is driven by an incapacity for reflexivity—the capacity to take conclusions and the processes by which these are derived as objects for critical reflection. Other's views appear incomprehensible because naïve realists are quite unaware of the processes by which they came to their own conclusions and the possibilities for error or alternative interpretation inherent in these processes. Because of low reflexivity, naïve realists may be more subject to the polarizing effects of group identity manipulations. Immersed in a group context, the naïve realist may come to see group conclusions as self-evident. Naïve realists, then, may embody the narrow form of perspective taking, one that does not take a broad societal view but reflects group views.

A final point about group opinion convergence is that the polarization model does not describe all forms of opinion convergence and should be examined relative to a "group endpoint convergence model." Polarization assumes that opinions converge to a point somewhat beyond the pre-discussion group mean. Deliberative theorists might counter that what may matter in deliberation is not initial group views, but the group view that emerges out of sharing information and group reasoning. A deliberative setting in which people have access to informative reading materials might also cause opinions to unhinge from prior views and instead negotiate about some new group mean. The group endpoint convergence model suggests that participants' final views will be a combination of their original individual opinions and some movement toward the mean post-discussion opinion of all *other* members of their group.

Several hypotheses are suggested:

H5: If citizenship identity limits the pool of arguments, reinforcing a group-sanctioned view, then those subject to citizenship reminders in the discussion conditions will experience greater opinion convergence.

H6: In the presence of conformity pressure from limited disagreement, private self-consciousness will reduce opinion convergence.

H7: Socio-political empathy should move opinions in a socially beneficial direction. This effect should be stronger in discussions, provided such discussions convey more information on which choices are socially beneficial.

H8: Naïve realism should reduce movement in opinions in a socially beneficial direction (main effect), but may promote convergence with group mean opinions particularly in the citizenship reminder condition (interaction effect).

H9: Individual opinion change may be captured by the "group endpoint convergence model"—opinions will converge not to pre-discussion group means, but will move a distance from pre-discussion views toward the mean of other participants at the conclusion of discussion.

Method

PARTICIPANTS

Knowledge Networks, an outside firm noted for its sampling work on academic deliberation projects, conducted the recruitment for this study. Of a sample of 6,935 Pittsburgh city residents (defined by zip code area) who could be reached via random digit dialing (RDD), 22% agreed to participate in this research and took a phone survey. Sampling differed from the typical methodology on other substantial deliberation projects

conducted by Knowledge Networks in that it did not utilize quota sampling to make demographic statistics more representative of the population as a whole. Thus, the sample accurately reflects who would come to this deliberation without demographic oversampling. This has two advantages. First, the sample better reflects what it would be if longer-term deliberations were a more widely used process in government because in this case quota sampling would likely be too expensive and contrary to legal equality requirements. Also, although quota sampling may result in demographics matching the population in certain crude categories, those who come to a deliberation after extensive oversampling of their demographic are most likely not typical of their demographic, yielding misleading results.

Of recruits who agreed to participate, 37% or 568 people showed for the Phase 1 on-campus deliberation. Knowledge Networks succeeded in phone-interviewing 463 of the 568 study participants before they came to their on-campus day of deliberation. A modest response rate was expected because recruits were asked to participate in a series of online deliberations that would take most participants eight-months to complete and which they could join only by coming to an initial on-campus, all-day deliberation. The final participation percentages are not, however, incomparable to that of another substantial long-term deliberation study, Vincent Price's Electronic Dialogue Project at the Annenberg School of Communication (Price and Cappella 2002; Price and David 2005). This project started with an effective sample of the population from which its discussants were drawn of about 3,686 (Price and David 2005). The number of people who ever participated in any discussion over the course of the year is 543, and the average number of people who participated in a given discussion was 305 (Price and

Cappella 2002). Ultimately, the response rates are modest. Comfort can be drawn from several considerations: a fair similarity to population demographics, the fact that the sample represents people who might be expected to participate in longer-term deliberations, and the objective of this research which is experimental and focused on psychological processes that should be universal.

Despite a strict RDD sample and modest response rate, the participants in this project reasonably matched the Pittsburgh city population on most demographic criteria. The sample was 77% Caucasian and 18% African-American, compared with CPS population benchmarks for the relevant zip codes of 75% and 20%, respectively. Fifty-six percent of the sample was female, compared with 53% for the population. Twelve percent of the sample was 18-29 years old, 22% 30-44 years old, 26% 45-59, and 27% 60+. This compares with population values of 26%, 20%, 26%, and 27%. The elderly and thirty-somethings are accurately represented, the young are underrepresented, while mid-life adults are overrepresented. Average age, however, is the same as for the population. Perhaps the greatest departure from population values is for education, which, as expected, is greater than for the population. Median education is "Some College" for both the sample and the population. Lower educational categories, however, are underrepresented, with 10% of the sample having less than a high school education and 14% having just a high school education, compared with 16% and 31% for the population. Nevertheless, the sample does contain the full range of educational levels.

Pittsburgh is an ethnically and class diverse community with a city population of 334,583 and over one million including surrounding areas, according to the 2000 Census. Neighborhoods range from suburb-like residential areas to areas of urban poverty. Although Pittsburgh is known to have a moderately high quality of life for a city its size,

people intimately involved with public life in the city do not believe this leads to either an especially high level of political involvement or non-contentious public dialogue.

MATERIALS AND PROCEDURES

Knowledge Networks obtained phone numbers for households in the City of Pittsburgh from a random digit dial (RDD) sample. Where numbers appeared in a reverse directory, the household was sent an advance letter on Carnegie Mellon University stationery describing the study and indicating that the household would be contacted shortly. A Knowledge Networks phone center called households in the RDD sample and requested the household member with the most recent birth date. Both the letter and the call center indicated that in exchange for participation in the study, participants would have a four out of five chance of receiving a Windows computer and eight months of ISP service. The remainder would receive \$100. Those who received a computer would be expected to participate in a longer-term online deliberation from home that would require six hours of discussion over eight months. People who agreed to participate were given a short phone-based survey including questions about their pre-deliberation policy attitudes, and they were scheduled for a one-day, eight hour on-campus deliberation. Participants were asked to come to a randomly-chosen day from the deliberation schedule, which spanned three weeks in July, including many weekends and weekdays.

Deliberations were held with up to 60 participants daily. After informed consent and a brief training session, participants took a web-based pre-survey. Next, they were given a 40 minute "library session" to learn more about the four policy topics, a break, 90 minutes for "deliberation" (face-to-face, online, or individual contemplation, depending

on condition), and lunch. The library session, break, and deliberation (same condition as before) were repeated in the afternoon, and this was followed by the second survey. In addition to the experiment with type of deliberation, another experimental condition involved either receiving or not receiving reminders of citizenship. In the citizenship condition, participants were reminded to think like citizens in a brief "talking-head" ahead of their deliberations (the non-citizen condition involved a different talking-head), their rooms had an American flag, and they were given name tags with American flags and the word "Citizen" preceding their names.

MEASURES

All question responses were measured on 7-point Likert scales, unless otherwise noted. Variable names are in brackets:

[Close Schools] How strongly do you agree or disagree with this statement: "In coming years, the Pittsburgh Public School District should close schools in addition to the ones <to be> closed this year." (Response options for both the phone pre-deliberation and post-deliberation surveys was: Please give me a number from 0 to 6, where 0 is strongly disagree, 3 is neither, and 6 is strongly agree.) [Elim 4500 Seats] "Besides the schools <to be> closed this year, the Pittsburgh Public School District should close additional schools to eliminate four thousand five hundred seats in the next three years." [Elim Middle Schools] "The Pittsburgh Public School District should convert to a K-8 system, removing middle schools." [Small Learning Commun.] "The Pittsburgh Public School District should put in place small learning communities in the high schools?" [Regional Choice Plan] "The Pittsburgh Public School District should institute a regional choice plan, allowing open enrollment in various regions of Pittsburgh."

Political Perspective Taking: This measure involved rewriting the Interpersonal Reactivity Index (IRI) questions pertaining to empathic perspective taking (Davis 1996) so that they focused on politically-relevant rather than interpersonal perspective taking. These include questions such as: "I sometimes find it difficult to see political issues from the point of view of people in other social classes." *Naïve Realism*: This measure, suggested by Ross (1996), involves such questions as: "I can understand why people who disagree with me politically believe what they believe." and "People who disagree with me politically seem to have an agenda." *Private Self-Consciousness*: Described in Carver and Scheier (1981), this is measured by Likert responses to such statements as, "I'm constantly examining my motives."

Findings

REPRESENTATIVENESS

Knowledge Networks succeeded in phone-interviewing 463 of the 568 study participants before they came to their on-campus day of deliberation. This raises the question of whether there were any systematic differences between those whose opinions were captured in the phone survey and those who were not. T-tests show that those who were phone surveyed before deliberation do not have significantly different post-deliberation policy opinions from those who were not phone surveyed. Also, no significant differences were found in demographics, including age, gender, ethnicity, or education. Because these groups do not differ systematically, it is reasonable to assume that an examination of the 463 people with both pre- and post- deliberation policy opinion data will be reasonably representative of the entire sample.

Another representativeness concern is whether a sample more demographically similar to the population, in particular one less educated than the obtained sample, would have seen similar opinion changes. Sample probability weighted regressions, similar to the t-tests reported in Table 1 Column 4, show highly significant ($p < .01$) mean changes in the same direction and about the same magnitude as Table 1. A more demographically representative sample would not have changed outcome opinions.

OPINION CHANGE

Table 1 shows, for the five policy opinions that were topics of discussion, what the pre- and post- deliberation day positions of all participants were. The percentage of "Don't Know" responses decreased for every policy issue from pre- to post- discussion opinion, indicating people felt more confident in their views. There were also dramatic changes in participant opinions on all but one of the topics of discussion. For example, the number of choices in favor of closing schools rose from 36% prior to the deliberation to 69% at the end of that day. Participants developed powerful majorities in favor of changes about which they were either divided or in opposition prior to the deliberation day. Interestingly, in the case of a plan to allow parents to place their children through open enrollment in a larger region of Pittsburgh (Regional Choice), parents were initially in favor of the plan but moved against it after due consideration. As for adding small learning communities, there was small aggregate movement from the "Don't Know" category to a "No" response, though the number of "Yes" votes remained essentially the same.

Table 1: Opinion Change During Day of Deliberation

Policy Issue	Pre-Deliberation Day Opinion	Post-Deliberation Day Opinion	Mean Difference on 7-Point Scale
Close Schools	36% Yes 29% Don't Know 36% No	69% Yes 11% DK 20% No	1.18***
Eliminate 4500 Seats	23% Yes 36% DK 41% No	62% Yes 11% DK 27% No	1.18***
Eliminate Middle Schools	39% Yes 25% DK 36% No	81% Yes 6% DK 13% No	1.63***
Add Small Learning Communities	70% Yes 24% DK 6% No	71% Yes 12% DK 17% No	-.34**
Regional Choice Plan	65% Yes 22% DK 13% No	42% Yes 15% DK 42% No	-1.19***

Notes: Each row reflects between 451 and 455 respondents who answered both the phone survey and post-deliberation day survey. Participants gave their policy views by providing a whole number between 0 and 6. They were told a 0 meant "strongly disagree," a 3 meant "neither agree nor disagree", and a 6 meant "strongly agree". They were also told that their response would be coded as a Yes if it was above 3 and as a No if it was below. The 'Yes,' 'DK,' and 'No' options in the table represent, respectively, answers that were below 3, at 3, and above 3. The mean difference value shows the mean change from pre- to post-opinions on the 0 to 6 scale.

*** $p \leq .001$. ** $p \leq .01$.

The movement of opinion in Table 1 was largely in the direction of the opinions of education experts. According to Carey Harris, co-director of A+ Schools, a Pittsburgh education public interest group that emerged from a mayoral education committee, closing schools and eliminating 4500 seats have unequivocal support from policy specialists (personal communication). Eliminating middle schools and small learning

communities have critics, but a majority of experts agree with these initiatives. Of these four issues, only in the case of small learning communities was participant opinion change in a negative direction. On that issue, the negative change was small and, in fact, the number of "Yes" votes started as a majority and increased slightly. Discussion facilitators report that one negative and accurate interpretation of the option gained some currency among participants—that the small learning communities might be set up to divide students along neighborhood lines, which participants were concerned could create divisiveness and hostility. As for the final policy option, regional choice, it has been little discussed by experts and is quite experimental. While the idea seemed desirable to participants at first thought, facilitators report that they moved to a more mixed perspective on the option after considering that regional choice may be unfair to students with uninvolved parents and could create overcrowding in some schools and uncertainty about other schools' futures.

DELIBERATION, CITIZENSHIP REMINDERS, AND OPINION CHANGE

The last section helps establish that opinion changes of the type found in research on Deliberative Polls™ are present in the current data: appreciable decreases in "don't know," dramatic changes in mean opinions, and reason-based opinion shifts in the direction of expert opinion. Table 2 examines the extent to which these changes are due to discussion, information from reading materials, social identity effects, or demographics.

Table 2: OLS Analyses of the Effects of Deliberation, Citizenship Reminders, and Demographics on Opinion Change, With Group-Robust Standard Errors

Dep. Vars:	Closing Schools Change	Eliminating 4500 Seats Change	Eliminating Middle Schools Change	Regional Choice Plan Change	Aggregate Policy Attitude Change
Indep. Vars.:	Raw Coef (s.e.)	Raw Coef (s.e.)	Raw Coef (s.e.)	Raw Coef (s.e.)	Raw Coef (s.e.)
Face-to-Face	.85** (.33)	.69* (.31)	.16 (.38)	-.47 (.37)	.44** (.17)
Online Delib.	.56† (.36)	.25 (.42)	-.33 (.43)	.02 (.38)	-.04 (.22)
Citizen Remind	.29 (.33)	.72* (.32)	.51† (.39)	-.23 (.40)	.49* (.21)
F2F X Citizen	-.94† (.53)	-1.54** (.51)	-.29 (.49)	-.03 (.55)	-.60* (.29)
Online X Citiz.	-.34 (.52)	-.57 (.59)	.15 (.55)	-.44 (.63)	.01 (.32)
Education (7pt)	-.09 (.09)	-.15 (.10)	.02 (.09)	-.14 (.09)	.003 (.05)
Income (7pt)	.01 (.06)	.06 (.06)	-.04 (.07)	.06 (.08)	-.01 (.03)
Age (7pt)	-.25*** (.07)	-.10 (.09)	-.15 (.11)	.10 (.09)	-.12* (.05)
Black	.31 (.30)	.22 (.40)	.02 (.32)	.45 (.30)	-.07 (.18)
Male	.09 (.19)	.12 (.22)	.08 (.23)	.32 (.21)	-.04 (.14)
Cons. (Info. Only, No Cit)	1.53*** (.38)	1.38*** (.43)	1.81*** (.57)	-.96* (.44)	1.38*** (.25)
N; R2; s.e.	455; .04; 2.07	451; .03; 2.19	451; .02; 2.29	451; .03; 2.30	451; .04; 1.33

Notes: To promote comparability of coefficients, continuous variables were put on 7-point scales.

"Change" is post- minus pre-deliberation attitudes. Small learning communities is not represented due to space, but its results are comparable to that for regional choice. "Aggregate Policy Attitude Change" is the average of eliminating 4500 seats change, plus eliminating middle schools change, minus regional choice plan change. Closing schools was not included because it is similar to eliminating 4500 seats. Regional choice plan was subtracted because it a decrease of support was expected for this option.

*** $p < .001$; ** $p < .01$; * $p < .05$; † $p < .10$; p-values are reported as one-sided for face-to-face, online, citizen reminder, and constant because of directional hypotheses. All others are two-sided. p-values are cluster robust and take into account possible error covariation between discussion group members.

Table 2 finds that the most potent and consistently significant influence on opinion change among the policy attitudes is obtaining information through reading and having time to contemplate it, with more limited evidence of an effect of face-to-face (f2f) discussion and citizenship reminders. Because the dependent variables of these regressions measure opinion change (post- minus pre- opinion), the constant term reflects the systematic effect on opinion change of just reading the information materials. These coefficients are generally highly significant and of a magnitude comparable to the overall change in raw opinions registered in Table 1, Column 4. F2F deliberation does show significant and appreciable effect on two policy views and in an aggregate policy attitude change variable that combines three of the dependent variables in Table 2 (see the table notes). Nevertheless, the effect of f2f deliberation is about half that for the information materials. Reminders of citizenship significantly affect attitudes on eliminating 4500 seats. Also, as with f2f deliberation, the direction of the coefficients across all regressions are consistently in the direction expected from the assumption that views will converge on expert opinion. This registers as a significant change in aggregate policy attitudes for those receiving citizenship reminders. R^2 values underestimate the explanatory power of these models because they do not include the variance explained by the constant, which is meaningful in this case. Standard errors are more meaningful and indicate that predicted values of the dependent variable have a standard deviation of about two points from actual values, on a dependent variable scale ranging from -6 to 6.

One noteworthy finding is that citizenship reminders in the f2f discussion condition appreciably dampens attitude change. This proves highly significant for one policy attitude, shows a trend effect for another, and proves significant for aggregate

policy attitudes. Citizenship reminders in the online condition were expected to have a positive effect because being online removes personal identity cues allowing the citizen reminder to dominate participants' thinking. While this effect did not materialize, the rationale may help explain why the reminders may have negative effects in f2f discussion. Such discussion provides ample personal identity cues. Reminded of their personal identity, people may rebel against heavy-handed efforts to remind them of their citizenship by resisting prosocial attitude change.

Another important revelation in Table 2 is that opinion change is largely unaffected by demographics, particular education. Age has a small negative effect on one policy attitude, perhaps because of age-influenced identification with neighborhood schools. Post-hoc tests show that demographics are jointly equal to zero for all regressions. Closing schools is the one exception, and only because of age. The overall absence of demographic effects indicates that attitude change in the kind of learning experience tested can generally be expected to affect all quarters of a population equally.

**DELIBERATIVE ATTITUDE CONVERGENCE—ABSENCE OF POLARIZATION,
PRESENCE OF GROUP ENDPOINT CONVERGENCE**

While deliberation does not have dramatic and consistent effects on mean attitudes, it may have other kinds of effects. Deliberation might cause attitudes to converge among group members even if mean attitudes are unaffected. Such convergence, as the speculative literature on attitude polarization on the Internet indicates, may matter. Two models were tested here: the polarization and the group endpoint convergence model. Virtually no evidence was found for the polarization model, while the data strongly confirm endpoint convergence.

The polarization model stipulates that people will be drawn toward some point beyond the initial group mean view. This was tested with a regression of the post-deliberation attitudes on the models depicted in Table 2, plus some new variables intended to capture polarization effects. The new polarization portion of the model stipulates that a person's final views are the result of initial views plus some movement toward (or beyond) the pre-deliberation mean view of the group. Thus, each person's pre-deliberation mean view was included in the regressions as well as a variable measuring the difference between the mean pre-deliberation policy views of all others in their group and each discussion group member's pre-deliberation policy view (this variable was set to zero for control group members). A coefficient of, say, one for this variable (and one for each participant's pre-opinion) would indicate that participants closed the gap between their initial views and their group's pre-deliberation views.

Complicating the model somewhat, post-hoc tests were conducted to determine whether coefficients for either the respondent's pre-deliberation opinions or the "closing the distance to the group mean" variable, which I will dub the "convergence" variable, were significantly different across experimental conditions. These tests showed that the coefficients of the pre-deliberation opinions differed between the control conditions and the discussion conditions. Thus, two variables for pre-deliberation opinions were included in each model, otherwise a single variable was used for all conditions.

In four of the five regressions testing the polarization model, the coefficient for movement toward the pre-deliberation view was not remotely significant—in three cases the coefficient was negative and in the fourth the p-value was .87. In the case of eliminating middle schools, the coefficient was significant and positive ($p=.02$, group-

robust). But, the size of the coefficient, .32, does not strongly support the hypothesis of convergence to a point beyond the initial group mean view. When this model is run along with the endpoint convergence model, the coefficient for closing the distance to pre-group opinion proves insignificant ($p=.10$, one-sided), while that for post-deliberation group opinion proves significant ($p=.03$). The two are well correlated, which may be why the pre-deliberation variable proves significant. In summary, no compelling evidence exists for the polarization model.

In contrast, the group endpoint convergence model fits the data very well. The model is just like the polarization model, except that instead of the difference between the pre-deliberation opinion of other group members and each respondent's initial opinion, the model examines a variable measuring difference between the group's *post*-deliberation opinion and initial opinion of each respondent. Regressions show that people on average close about half (.46) of the distance between their initial opinion and the mean opinions of their groups, and these coefficients are significant at the .01 level or better in all cases. The models show R^2 values averaging .16 and ranging from .10 to .25. Pre-deliberation opinions contribute appreciably to this explanatory power. The analyses in Table 3 incorporate the group endpoint model and give some idea of the strength of these variables, though that strength has been somewhat attenuated by adding a multitude of additional variables. Post-hoc tests of expanded regressions show there are no significant differences between f2f and online groups in their coefficients for closing the distance to the group's post-discussion mean opinions. Coefficients for control groups were, of course, non-significant.

The success of the group endpoint convergence model suggests that the views of discussion group members bear a stronger relationship to their final group mean attitude than do the views of control group members. This relationship could take several forms. It may mean that, relative to control group members, the views of discussion group members cluster closer together (less variance), are farther from the global mean of all participants, or center more on the views of their group (mean shift). A set of analyses were conducted to determine which of these is the case. Results show that discussion group members are not significantly closer to their group means than are control group members (groups of control members who took the experiment at the same time). They are also not, relative to control group members, significantly farther from the global mean of all participants or a global mean of all members of their experimental subgroup. They *do* prove significantly closer to their group post-discussion mean than to the global post-discussion mean than control groups. Because discussion group members are no farther from the global mean, these results indicate simply that discussion group members center about their discussion group means, but these means scatter about the global mean in such a way that all group members taken collectively are no farther from the global mean than are control group members. In short, the global post-experiment mean serves as the reference point for all groups and discussion does not appreciably move people away from that mean even though it does result in greater centering of opinions about the post-discussion group mean.

THE OPINION EFFECTS OF PERSPECTIVE TAKING, CONFORMITY, AND KNOWLEDGE VARIABLES

Table 3 examines the effects of perspective taking, conformity, and knowledge. The regressions reported incorporate the endpoint convergence model, with the term "Converge" indicating a variable that is the difference between the mean views of other discussion group members and the respondent's initial views. The coefficients in the fourth row of the table (Converge), indicate the proportion of the distance closed between a participant's initial views and the post-discussion view of the group. Hypothesis 5 suggested that if citizenship identity limits the pool of arguments by reinforcing a group-sanctioned view, then those subject to citizen identity reminders will show stronger group convergence. This was tested by dividing the converge variable into two variables, one for participants who received citizenship identity reminders, and one for those who did not. Post-hoc tests of equality between these two coefficients indicate no evidence that citizen identity reminders resulted in stronger group convergence. Indeed, in all but one regression the citizenship reminder X convergence coefficient was non-significantly smaller than for those receiving no citizenship reminder. Thus, no evidence is found that group identity limits the argument pool.

Table 3: OLS Regressions of Opinion Outcomes on Perspective Taking, Conformity, and Knowledge Variables, With Group-Robust Standard Errors

Dep. Vars: Indep. Vars.:	Closing Schools Raw Coef (s.e.)	Eliminating 4500 Seats Raw Coef (s.e.)	Eliminating Mid. Schools Raw Coef (s.e.)	Regional Choice Plan Raw Coef (s.e.)	Small Learning Communities Raw Coef (s.e.)
Pre-Opinion X Control	.31** (.10)	.35** (.11)	.11† (.07)	.23* (.12)	.18* (.08)
Pre-Opinion X Discussants	.85*** (.15)	.74*** (.15)	.62*** (.14)	.73*** (.14)	.59*** (.18)
Converge (pre- to group post)	.75*** (.16)	.53*** (.16)	.34† (.23)	.28 (.25)	.65** (.26)
Converge X Soc. Empathy	-.07* (.03)	.02 (.04)	-.01 (.03)	.03 (.05)	-.07* (.04)
Converge X Naïve Realism	-.02 (.04)	.12* (.05)	-.09† (.05)	-.19** (.07)	-.01 (.06)
Decision Knowledge	.31*** (.09)	.15* (.08)	.15† (.11)	.11 (.12)	-.27** (.11)
Pol. Knowledg	.004 (.07)	.15* (.08)	.09 (.08)	-.02 (.09)	.04 (.09)
Soc. Empathy	.15** (.06)	.13* (.08)	.05 (.07)	.01 (.07)	-.08 (.09)
Naïve Realism	-.41* (.18)	-.19† (.13)	-.15* (.09)	.06 (.10)	.06 (.10)
Prvt Self-Cons.	-.03 (.08)	-.01 (.09)	-.02 (.11)	.16* (.09)	-.10 (.12)
Cons.	.59 (.58)	.55 (.70)	3.70*** (.66)	2.08** (.79)	4.43*** (.61)
	Also controlled: Experimental Conditions, Demographics, Prvt Self-Cons. X Converge				
N; R2; s.e.	451; .29; 1.59	447; .22; 1.72	447; .16; 1.62	447; .14; 1.72	

Notes: Continuous variables are all on 7-point scales. Converge is the difference between mean views of other *discussion* group members and the respondent's initial views. Prvt Self-Cons. X Converge is always insignificant. The naïve realism reported for closing schools is for the f2f, no citizen reminder condition, which post-hoc tests indicate is significantly different than other experimental conditions. Converge X Naïve Realism for Eliminating 4500 Seats is for the citizen reminder condition only. p-values one-sided.

Rows five and six of Table 3 show the interaction between Converge and the perspective taking variables, social empathy and naïve realism. Also present in each regression was the interaction between Converge and private self-consciousness. This was never significant and, for the sake of relative simplicity, is not reported. All three of these interactions, as well as the main effects of the perspective taking and private self-consciousness variables, were tested in expanded regressions to determine, using post-hoc tests, whether coefficients were significantly different across experimental conditions. With two exceptions, indicated in the table notes, they were not.

Results in Table 3 provide mixed support for proposed hypotheses. Hypothesis 6 stipulates that in the presence of conformity pressure from limited disagreement (limited argument pool), private self-consciousness will reduce opinion convergence. The Converge X private self-consciousness interaction never proves significant, so again no evidence was found for the view that conformity pressure may limit disagreement and the argument pool. Hypothesis 7 stipulates that social empathy should move opinions in a pro-social direction. This could take the form of convergence to group means that reflect a pro-social direction or, if the group means do not persuade the empathetic that they reflect socially beneficial views, it may involve simply a mean shift toward more beneficial views. Table 3 shows that for two policy views, closing schools and eliminating 4500 seats, social empathy does result in a significant mean change in a clearly socially beneficial direction. In two cases, social empathy mildly reduces convergence with group post-discussion means, suggesting that the socially empathetic thought their group's views did not reflect a broadly socially beneficial view. These group mean views are spread around the global mean, so as long as social empathy does

not have a main effect, a weakening of convergence will not shift mean views. Overall, then, social empathy does shift views in a pro-social direction, but through its main effect, not through convergence.

Hypothesis 8 stipulates that naïve realism should reduce movement in opinions in a socially beneficial direction (main effect), but may promote convergence with group mean opinions particularly in the citizenship reminder condition (interaction effect). Indeed, in the case of closing schools and eliminating middle schools, the main effect of naïve realism proves significant and negative. The interaction of naïve realism with convergence, however, proves more complex. It does increase convergence with group opinions in the case of eliminating 4500 seats. As indicated in the table notes, in this case only, the interaction only reflects the impact only on participants in the citizenship reminder condition, consistent with expectations. (Post-hoc tests on expanded regressions indicated that for this policy attitude the coefficient for the citizenship reminder conditions was significantly different than for those not receiving a reminder.) In the case of the regional choice plan, however, naïve realism reduces convergence with group mean opinion. It appears that in some cases naïve realism can yield resistance to group views.

A final noteworthy aspect of Table 3 is Decision Knowledge, which was measured as a multiple choice test of factual knowledge about the five policy questions. Decision knowledge significantly affects three of the five opinions and shows a trend in the fourth. In each case, its effect on final opinion is in the direction of expert opinion. Decision knowledge proves to have the most consistent and strongest effects of the substantive variables in Table 3, suggesting the importance of information rather than

perspective taking or conformity. It would also have the same impact on attitude change because replacing the post-attitude dependent variables with the change in attitude variables leads to regressions mathematically equivalent to the ones depicted. Only the impact of the pre-opinion variables changes.

Discussion and Conclusion

This paper provides a revealing, if complex, set of findings regarding the role of information and deliberation on policy attitude change. Contrary to the literature of Deliberative Polling™, I find that the preponderance of the policy attitude change effects during a day of deliberation were not due to discussion. On three policy issues, both non-discussant control participants and discussion participants registered statistically equivalent levels of attitude change. On two others, face-to-face discussion had half as much impact as simply participating in the research, without discussion. Also, online discussion did not significantly change attitudes. Thus, it appears that most of the attitude change in this study was the result of having had 80 minutes to read briefing materials on these policies and perhaps time to contemplate this material. This finding cannot be readily dismissed as the consequence of somewhat greater average education among study participants than the general public, because education had no significant impact on attitude change. As a researcher of deliberation, I had hoped to find outcomes more supportive of the value of deliberation, but I did not.

While this result needs to be robustly confirmed by additional deliberative studies employing a fuller range of policy issues, it does raise questions about the implications of much deliberative research to date as well as the growing industry surrounding public deliberation. The focus of research on Deliberative Polls™ has been on the value of

deliberation in solving problems of liberal democracy, particularly low levels of knowledge and non-attitudes. But, if the main value of discussion is pedagogical, it should be considered relative to other pedagogical methods, including simply reading and contemplating. The Deliberative Polling™ research shows powerful effects of the deliberative experience on both knowledge and attitudes, but the design of this research, thus far reported, does not clearly separate the effects of discussion from the effects of reading materials.

If much of the effect of deliberative experiences on attitude change and knowledge is due to reading materials, it may be useful to contemplate methodologies in which the focus is these materials, not deliberation. An important issue is how to motivate people to read the materials carefully in the first place, and indeed deliberation may prove to be an important carrot, even if it is not the focal treatment. One novel methodology might involve sending policy briefing materials to a large sample of participants and then accepting participants into a deliberation based on their knowledge of the material. Only a few need participate, but a much larger public could be motivated to learn about the issues, perhaps more so than if they were preparing for a standard deliberation. In addition, if much of the opinion effects occur via reading materials, then deliberative methods, such as Deliberative Polling™, that expect participants to read materials at home, may not be efficient. Time should be allotted during the day of deliberation, and an effort should be made to determine the most efficacious allotment of time to deliberation and reading.

The current study does support the value of deliberation as a motivational tool. Anecdotal evidence and open-ended comments by a fair number of control condition

participants indicated that they were quite disappointed and bored. One anecdote was a highly disgruntled control participant who asked me why she had been punished by being made to sit and think through the duration of the research. I imagine far fewer control participants would have come to the experiment had they known in advance that they would be placed in this condition. Moreover, discussion participants in the on-campus portion of this study indicated significantly greater motivation to participate in online discussions in the next phase of the study, the at-home phase not herein discussed.

Deliberation may also have value in ways that are less global than reading policy briefs, yet nonetheless important. In this study, deliberation did prove to make an important contribution to socially-beneficial attitude change on the most contentious and personally involving issue discussed—closing schools. It may be that deliberation has an effect primarily on such more involving issues because it encourages participants to take into consideration the wider community that will be affected by their decisions.

These findings regarding opinion change should perhaps also raise the question of whether the research agenda regarding deliberation should focus predominantly on its value in solving problems of liberal democracy, rather than on addressing the desiderata of deliberative theory. Other results from the current study suggest that deliberation helps turn participants into better citizens. Face-to-face discussants acquire a persistently enhanced citizen identity, an identity significantly related to an array of participatory activities, particularly voting (Muhlberger 2005a). Deliberation also helps reduce stealth democracy beliefs, a set of beliefs that praise government by experts and disparage compromise and public input (Muhlberger 2005b). Finally, participants in the current study gave remarkably high legitimacy to the decisions made by their deliberations.

Another key finding of the current paper is an absence of evidence for opinion polarization as typically conceived in the psychology literature. Pundits such as Sunstein (2001) have made much of highly constrictive laboratory experiments that find enhanced polarization of attitudes among online discussants reminded of a group identity. Such extrapolations are not consistent with research on the wild Internet, which finds no evidence of polarization (Muhlberger 2003; Stromer-Galley 2002). The current data find no opinion shift or polarization among online discussants, whether reminded of their group identity as citizens or not. The absence of this effect may be due to a number of differences between the current study and the earlier research (Lea and Spears 1991). The earlier experiments may have depended heavily on the absence of any reminders of personal identity. Participants were not allowed to use their names and could only interact briefly, typically less than 30 minutes. The current study, like the real Internet, does not contain such restrictions. Another factor may be that the earlier work relied on online textual communication, while the current study employed online audio. If this difference mattered, then the results of the current study will become increasingly relevant as ever larger numbers of Internet users turn toward audio rather than textual communication.

Though this paper did not find polarization, defined as gravitation toward the pre-discussion group mean opinion, it did find "group endpoint attitude convergence." That is, both online and f2f discussion participants strongly gravitated toward the *post*-discussion group mean opinion of others in their group. This finding provides some cover against the charge that deliberation will lead to conformity-dictated decisions (Hibbing and Theiss-Morse 2002; Mendelberg 2002). Rather than simply solidifying

initial group prejudices, groups in this project found their way to conclusions quite independent of their initial views. Individuals' convergence to the group endpoint might be due to some conformity process, or it may be due to an exchange of information or of enhanced perspective taking. Reassuringly, however, the findings differ markedly from standard social psychological results involving conformity in small groups. In addition, the discussion group mean opinions center about the global mean of all participants, resulting in no divergence from that global mean that is significantly different than for control groups. Even if these group processes involve some conformity, this conformity makes little difference in mean opinions.

Consistently, an examination of a number of substantive variables indicate that decision knowledge played the largest and most consistent role in final policy opinions (Table 3). Again, the evidence points to information as an overriding factor in post-deliberation opinion. Also, no evidence was found for conformity through limitations of the argument pool. Private self-consciousness should reduce the effects of such conformity, yet no significant effect of this variable was found. Perspective taking did play a role in opinion change, with broad social empathy increasing and naïve realism decreasing movement of several opinions in socially beneficial directions. These effects, however, were not specific to discussion but present for all participants, indicating that perspective taking operates as well when people merely read policy briefing materials. Finally, it was found that social empathy mildly reduced group endpoint attitude convergence for two policy opinions. This suggests that people with a broader societal perspective may have found the views shared by others in their group wanting.

The findings that deliberation did not have the most substantial effects on attitudes, that perspective taking was not more effective among discussants, and that those with a broader societal perspective were actually somewhat less inclined to converge on their group's views all seem to point to the possibility that there was something lacking in these deliberations. Perhaps what was wanting was specific to this study. Alternatively, it may be that standard deliberative approaches do not yield the kinds of interactions commended by deliberative theorists. Rosenberg (2005) finds that even in carefully and variously moderated deliberations among highly educated participants only about 14 minutes of hours of conversation rose to the level of analytical reasoning. Perhaps participants construct the notion of citizen engagement as one of coming to consensus and believe this as best achieved by avoiding confrontation. This would lead to quite pleasant experiences that do not do enough to challenge participants' views and understandings.

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