Agreement and Disagreement in Group Deliberation: Effects on Deliberation Satisfaction, Future Engagement, and Decision Legitimacy

JENNIFER STROMER-GALLEY and PETER MUHLBERGER

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Agreement and Disagreement in Group Deliberation: Effects on Deliberation Satisfaction, Future Engagement, and Decision Legitimacy

JENNIFER STROMER-GALLEY and PETER MUHLBERGER

While research on democratic deliberation has burgeoned, little systematic work has been done on the effects of the communication content of deliberations. We examine how expressions of agreement and disagreement during online deliberation affect participants evaluations of their experience, including satisfaction, reevaluation of opinions, and expected future participation. The effects of these evaluations on perceived legitimacy and opinion ambivalence also are considered. Several alternative hypotheses are entertained, including avoidance, in which high disagreement reduces evaluations; reevaluation, in which high disagreement enhances evaluations; sociability, in which high agreement enhances evaluations; balance, which suggests that a balance of agreement and disagreement would enhance evaluations; and disequilibrium, which indicates that high agreement and low disagreement and the reverse yield good evaluations. The hypotheses are tested with survey data and a discussion content analysis of a representative sample of 179 individuals who participated in a deliberation experiment. Findings indicate that deliberation evaluations are important for decision legitimacy and ambivalence. Also, the sociability hypothesis is strongly confirmed for satisfaction. The disequilibrium hypothesis is confirmed for future engagement. The avoidance hypothesis is not supported, contesting the prevalent view that people seek to avoid political disagreements.

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Keywords

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The burgeoning literature on democratic deliberation theory (Barber, 1984; Bessette, 1994; Bohman, 1996; Cohen, 1997; Dahlberg, 2001; Elster, 1998; Fishkin & Laslett, 2003; Gutmann & Thompson, 1996; Habermas, 1984; Macedo, 1999; Warren, 1992) and research (Barabas, 2004; Conover, Searing, & Crewe, 2002; Gastil & Dillard, 1999; Luskin, Fishkin, & Jowell, 2002; McLeod et al., 1999; Muhlberger, 2007; Muhlberger & Weber, 2006; Price, Cappella, & Nir, 2002) illustrates what Dryzek (2002) calls the "deliberative turn"—growing academic attention to deliberation practice. Increasingly, a multitude of organizations bring democratic deliberation practices to bear in citizen discussions of public policy. These include e-thePeople, Web Lab, AmericaSpeaks, Public Agenda, Everyday Democracy, and many other deliberation organizations that are

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drawing the attention of researchers (Button & Ryfe, 2005). Citizens also participate in democratic dialogue as jurors, as voters (Huckfeldt, Sprague, & Levine, 2000), and in everyday political discussions (Conover et al., 2002).

Much of the research on democratic deliberation just cited, however, treats delibera- 40
tion as a black box. It measures some attributes of interest and then confines analysis to observing change from before to after the deliberation without considering what has happened *during* the discussion. As a result, the research to date has generally not concep- tualized deliberations as *communication* events (for an exception, see Price, Nir, & Cappella, 2006).   45

This article approaches deliberations as first and foremost communication events. As such, we assume that the processes of communication that create the discussion likely have effects on deliberation outcomes. Of specific interest here are two types of communi- cation: expressions of agreement and of disagreement. Such expressions have been stud- ied and theorized in the conversation analysis and social norms literature but have not 50
been investigated extensively in deliberation research. We believe that expressions of agreement and disagreement likely have effects on how participants evaluate the delibera- tion experience. We also believe that such expressions will have an effect on such outcomes as participants' willingness to deliberate in the future, on the perceived legiti- macy of the group decision, and on the ambivalence of that decision.   55

These predictions are tested with data from pre- and postsurveys and with counts of expressions of agreement and disagreement obtained through systematic content analysis. The data are from a representative sample of Pittsburgh, Pennsylvania, residents who came to a 1-day deliberation experiment to discuss the problem of underutilized public schools. Findings reveal that nonlinear relationships between expressions of agreement 60
and disagreement affect deliberation satisfaction and willingness to participate in future deliberations. For the most part, however, higher levels of agreement enhance satisfaction with the deliberation, and an interaction of agreement and disagreement boosts expected future participation. In contrast to expectations from the literature suggesting people avoid disagreement, higher levels of disagreement do not exercise a clear negative effect on 65
satisfaction, perceived reevalation of opinions, or expected future participation. Our results also indicate that satisfaction with deliberation powerfully affects such outcomes as expected future engagement and perceived decision legitimacy. Expected future engagement also reduces decision ambivalence.

Literature and Theory   70

Expressions of agreement and disagreement should be important attributes of deliberation. Even local community deliberations bring diverse people together—people who have different perspectives and values, see different problems if not different aspects of a prob- lem, and hold different solutions as the key. Part of what makes deliberation experiments so promising is the benefit of having people hear and talk with people who are unlike 75
themselves. This also makes deliberation potentially problematic, because deliberation tends to be on topics that invite conflict. Conflict—the clashing of opposed values, beliefs, experiences, and facts—is communicated through expressions of disagreement.

The problem with expressions of disagreement in group discussions is that such expressions are believed to violate expected norms of politeness that are at work in many 80
social interactions, particularly those with strangers (Brown & Levinson, 1987; Eliasoph, 1998; Leech, 1983). When a person disagrees with what someone else has said, it can be expe- rienced as face threatening (Goffman, 1959). Pomerantz's (1984) research on assessments in

dyadic conversation suggests that disagreement is the dispreferred response to an initial assessment of some aspect of the world. She explains that "across a variety of situations conversants orient to their disagreeing with one another as uncomfortable, unpleasant, difficult, risking threat, insult, or offense" (p. 77). These negative effects of disagreement give rise to the view that the public prefers to avoid political discussion and deliberation (Eliasoph, 1998; Hibbing & Theiss-Morse, 2002; Mutz, 2006), because these are perceived to involve people in difficult disagreements.

Although disagreement may make political interaction unpleasant and demotivating to the interlocutors, disagreement and conflicting perspectives may serve an essential role in a healthy and functioning democracy (Barber, 1984; Habermas, 1962/1989; Huckfeldt, Johnson, & Sprague, 2004; Schudson, 1997). In healthy democracies, a full range of perspectives must be articulated and considered (Gastil, 2000). Such examinations, identifications, and establishments require differing perspectives. Similarly, in small group research, conflict in group discussion increases creativity and divergent thinking (De Dreu & West, 2001), and in theory should increase the quality of the discussion by allowing the group to examine a broader range of perspectives and a richer array of assumptions (Janis, 1972; Nemeth, Brown, & Rogers, 2001).

Empirically, exposure to disagreement, or "cross cutting views" (Mutz, 2002), is thought to be beneficial to individuals. In political discussions, individuals' disagreement exposure benefits opinion quality. Specifically, exposure to a discussion in which people from different perspectives are brought together and in which disagreements emerge improves one's understanding of others' perspectives (Price et al., 2002). Exposure to dissimilar views also ensures that alternatives to political solutions are fully considered (Fishkin, 1991). Expressions of minority or alternative views entail that participants can list a wider range of arguments and counterarguments than those not exposed to such views and moderate their opinions after discussion of an issue (Smith, Tindale, & Dugoni, 1996).

Hence, in deliberative processes a puzzle emerges. The social norms that structure group interaction potentially interfere with a group's ability to engage in a beneficial aspect of deliberation: disagreement. Indeed, deliberative processes that invite more discussion also invite more conflict, which in turn leads to less satisfaction with the decision-making process (Morrell, 1999). At the same time, however, the research suggests that conflict produces a higher quality decision in groups (Nemeth et al., 2001; Schweiger, Sandberg, & James, 1986).

One possible moderator of the social problems that are a consequence of disagreement is expressions of agreement. People's interactions are grounded on an assumption that there will be agreement on the topics being discussed (Jacobs & Jackson, 1981; Leech, 1983; Pomerantz, 1984), because agreement signals common ground (Brown & Levinson, 1987) and provides assurance to the interlocutors that there is no face threat (Goffman, 1959). Agreement, then, serves as an essential element in interaction, because it helps to establish and maintain smooth social relations. It provides cues that the interactants are aiming to work in harmony with each other in the interaction (Kuo, 1994, p. 96). This possible moderating effect of agreement in deliberation has not been examined in past research.

It is important to note that it is potentially a different experience to be someone who expressed agreement or disagreement in a deliberation than to be someone who witnessed agreement or disagreement expressed by others. For instance, people may expect greater politeness from others than from themselves, or vice versa. We believe it is important to separately consider what people express and what they witness among participants other

than themselves. Prior literature has not investigated this dimension of witnessing versus expressing.

Alternative Hypotheses

Based on the theories outlined, we offer the following alternative hypotheses. Opposing hypotheses are needed to take into account a range of plausible possibilities.

Expressions of disagreement and agreement likely have some relationship with whether individuals feel that they reevaluated their assumptions and opinions in a deliberation. The direction of that relationship, however, is not clarified by current research. Perhaps high levels of disagreement cause people to reevaluate their assumptions and opinions. Thus, our first hypothesis involves *reevaluation*: High levels of disagreement lead people to reevaluate their assumptions and opinions. We will separately analyze the effect of a person's own disagreement and the disagreement the person witnesses among others because the magnitude, direction, and form of the relationship may differ for each of these. Table 1 provides an overview of this reevaluation hypothesis and other hypotheses discussed in this section. Non-linear interaction effects are further discussed in the next section.

There is also a possibility that if people view challenges to assumptions to be the *purpose* of public deliberation, then higher levels of disagreement, expressed by an individual or witnessed by others, could increase satisfaction with the deliberation and willingness to participate in future deliberations. This second hypothesis we call *devil's advocacy*.

On the other hand, people may judge deliberation using the more typical social norm of politeness. People may negatively evaluate deliberations that involve higher levels of disagreement. This might be termed the *avoidance* hypothesis, because people find the disagreements that they express or that they witness unsatisfying and seek to avoid future deliberation experiences. People could also shut out conversations they believe are violating normative expectations, resulting in less reevaluation of their opinions. Perhaps, as well, the norm of politeness may not only discourage disagreement but also actively encourage people to evaluate a deliberation with high levels of *agreement* more favorably, whether that agreement is expressed or witnessed. This is termed the *sociability* hypothesis in light of Schudson's (1997) definition of sociable interaction as an effort to get along.[1]

Individuals' expressions of agreement and disagreement might interact with each other. Participants discussing real-world and important problems may be genuinely motivated to try to find the best solution to these problems and realize that doing so will involve disagreements. But deliberating individuals who engage in or witness a high level of disagreement may be less likely to feel satisfied with the discussions and less willing to participate in the future. If agreement serves to counteract these negative effects, participants may instinctively desire a balance of agreement and disagreement—evaluating deliberations more favorably and being more willing to participate in the future when agreement and disagreement are balanced and at high levels. Our fifth hypothesis, then, is the *balance* hypothesis.

Alternatively, deliberations may be most favorably evaluated when agreement is high and disagreement low, and vice versa. If some participants judge a deliberation via a politeness norm, they may view the deliberation most favorably when they are expressing low levels of disagreement and high levels of agreement. On the other hand, other participants may come to understand the task of deliberation to be to critically evaluate policies. They may therefore view as a sign of success the expression of much disagreement and

Table 1
Overview of agreement and disagreement hypotheses

	Dependent variables		
Hypothesis	Satisfaction	Future engagement	Reevaluation
Reevaluation			High disagreement *increases* (expressed or others')
Devil's advocacy	High disagreement *increases* (expressed or others')	High disagreement *increases* (expressed or others')	
Avoidance	High disagreement *decreases* (expressed or others')	High disagreement *decreases* (expressed or others')	
Sociability	High agreement *increases* (expressed or others')	High agreement *increases* (expressed or others')	High agreement *decreases* (expressed or others')
Balance	High disagree by high agree *increases* (expressed or others')	High disagree by high agree *increases* (expressed or others')	
Disequilibrium	High disagree by high agree *decreases* (expressed)	High disagree by high agree *decreases* (expressed)	

Note. *Disagreement expressed* is an individual respondent's expressed disagreements. *Disagreement others'* is the total disagreement a respondent witnesses from other participants. The decreased relationship for the interaction of disagree and agree in the disequilibrium hypothesis also implies that unbalanced combinations (such as high/low, or vice versa) will have relatively higher levels of the dependent variables.

little agreement. We call a desire for such an outcome the norm of "rational critique." In deliberations with high disagreement and little agreement, these people will be more satisfied and more willing to participate in the future.

Those following the politeness norm and those following the rational critique norm should behave differently in ways that matter to evaluation outcomes. People following a politeness norm should themselves be more likely to express agreement and less likely to express disagreement than those without this norm. Likewise, people following a rational critique norm should show the opposite pattern. People with extreme combinations of expressed agreement and disagreement therefore reveal their normative preferences in their behavior, and, simultaneously, their behavior creates the conditions for fulfilling

these preferences. These extreme combinations should therefore correspond to more favorable evaluations of the deliberations. We call this sixth hypothesis the *disequilibrium* hypothesis. It should be noted that the disequilibrium hypothesis predicts effects only with individual expressions of disagreement and not witnessing others' disagreements, because individual preferences are not revealed in the conduct of others.

In addition to the above hypotheses, we account for the possibility of diminishing or accelerating effects of the range of agreement or disagreement. When a variable, such as aggregate group agreement or disagreement, has a particularly large range, the effect of the variable on evaluations of the deliberation may reach a ceiling. For example, when a person has heard 25 expressions of agreement in a group, additional agreement may have little effect. On the other hand, a variable with limited range, such as individual agreement, might show small accelerating effects. As an individual moves from three to six expressions of agreement, the effect on evaluations may be more pronounced than a move from zero to three agreements.

All of the above hypotheses, then, suggest that agreement and disagreement should influence evaluations of deliberation. We also expect that evaluations of deliberations, in turn, will have important consequences for a deliberation's success. People who favorably evaluate a deliberation, both in terms of general satisfaction and perceptions that they have reevaluated their own beliefs, should be more motivated to participate in future deliberations. In short, people should be more willing to repeat experiences they consider valuable and productive. Similarly, those with more favorable evaluations of a deliberation should consider the collective policy conclusions from the deliberations more legitimate as a prescription for actual public policy. Favorable evaluations suggest the participants believed the deliberation process was a good one for achieving its purpose: informed public policy making. A good process should yield more legitimate conclusions. Finally, people with more favorable evaluations should have reduced ambivalence with respect to their own policy choices. If, as expected, participants evaluate a deliberation more favorably if the experience contributed to their reasoning about the policy issues at hand, then it should reduce their ambivalence. These observations yield the following hypotheses:

H1: Positive evaluations, including satisfaction with the deliberation and the perception that the deliberation instigates reevaluation of beliefs, will increase perceived decision legitimacy.

H2: These two forms of positive evaluation will also increase willingness to participate in future deliberations.

H3: These positive evaluations will decrease decision ambivalence.

Here we treat participants' perceptions that they are motivated to participate in future deliberations as an outcome affected by present satisfaction, while we earlier treated them as an evaluation of the deliberation. Clearly, people who say they are willing to repeat the deliberation experience indicate a positive assessment of the current deliberation. Nevertheless, expectations of future engagement are ultimately a type of behavioral intention. According to the theory of reasoned action (Ajzen & Fishbein, 1980; Vallerand, 1992), behavioral intentions are outcomes of evaluations. Causally, then, future engagement can be treated as an outcome of evaluations, though it is such a direct outcome that it may be worthwhile considering it as an assessment for some purposes.

Statistical Considerations

This section explains how the above hypotheses are tested and will explain how some of the statistical methods were chosen. The alternative hypotheses considered here can be

fully tested with OLS regressions containing nonlinear terms for agreement and disagreement. The proposed functional form for these regressions involves the agreement and disagreement variables, the squares of these variables, and their interaction. Depending on which coefficients prove significant, these terms can capture the full range of alternative hypotheses. The sociability hypothesis would be confirmed with a significant positive coefficient for the agreement variable or perhaps its square. The reevaluation and devil's advocacy hypotheses would show the same, but for disagreement rather than agreement. The avoidance hypothesis would have a significant negative coefficient for disagreement or its square. The balance hypothesis predicts an especially positive evaluation from roughly even combinations of agreement and disagreement. This would manifest as a significant positive coefficient for the interaction between agreement and disagreement. The disequilibrium hypothesis predicts especially positive evaluations from high-low and low-high combinations of agreement and disagreement. This would manifest as a significant negative interaction of these variables. Ceiling effects would appear as significant negative square terms, while accelerating effects would appear as significant positive square terms. Table 1 summarizes these relationships.

Squared and interaction terms are often collinear with their constituent parts. This is an important consideration here given the relatively small number of data points ($N = 179$) available in this data set. In addition, Occam's Razor implies that the simplest model that fits the data is best. To address collinearity and to take simplicity seriously, a common practice in working with nonlinear regression terms is to drop higher order terms that do not prove statistically significant (Jaccard, Turrisi, & Wan, 1990). This practice was adopted here. Lower order terms, such as linear terms, however, must not be dropped if higher order terms prove significant. The nonsignificance of these terms in the presence of significant higher order terms is meaningless, because their significance is contingent on additive changes of scale. The significance value indicates whether the lower order term is significant at the current zero point of the scale and not whether it is significant throughout the full range of the variables.

We chose to use group-robust Huber-White standard errors instead of hierarchical linear modeling (HLM). In this research, individuals are part of discussion groups, which might suggest the use of HLM. HLM would be used if, for example, we stipulated that aggregate group agreement levels affect the relationship between individual agreement and an individual's deliberation satisfaction. Such a hypothesis seems implausible to us. Instead, we propose that outcomes such as individuals' satisfaction are affected by both their expressed agreement and the amount of agreement they witness among group members. In effect, both of these variables are at the level of the individual. Simple linear regression is appropriate to test this hypothesis—but for the possibility that errors may not be independent within discussion groups. This concern is fully addressed by our group-robust Huber-White standard errors.

Method

Participants

Knowledge Networks (KN), a 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 answered a phone survey. Sampling differed from KN's typical methodology on other deliberation projects—it did not involve

quota sampling to make demographic statistics more representative of the population as a whole. Thus, the sample better generalizes to the kinds of people who would come to deliberations if deliberation were a more widely used process of government. Government would likely be unable to use quota sampling because of cost and legal restrictions. Also, a nonquota sample avoids the concern that those who come to a deliberation after extensive oversampling may be atypical of their demographic. Of recruits who agreed to participate, 37% ($n = 568$) showed for the on-campus deliberation. The final participation percentages are not incomparable to that of another substantial long-term deliberation study, Price and Cappella's (2002) Electronic Dialogue Project.[2] Despite a strict RDD sample and modest response rate, the participants in this project generally matched the city population on most demographic criteria (see Muhlberger & Weber, 2006). The sample was 77% Caucasian, 18% African American, and 56% female; had an average age of 50; and had a median education of "some college."

Materials and Procedures

Deliberations were held on the topic of underutilized public schools in Pittsburgh. As the population has declined, the number of school-age children has dropped. Many schools in the city remain open but not at full capacity. Since the 1980s, there have been proposals for school closings and consolidations. In 2002, the problem of school consolidation came to a head when three foundations froze funding for public schools because there was no consolidation plan. The mayor then formed a commission to develop one. In 2003, the commission released its report, which included a proposal to close several elementary schools, a middle school, a high school, and two education centers. In addition, it proposed converting several elementary schools to K–8 programs, thereby consolidating elementary and junior high into one building. Given this background, participants were asked to deliberate on the options for closing or consolidating public schools.

Deliberations were held with up to 60 participants a day, on 16 days in a 3-week period. Participants came to Carnegie Mellon University, where they provided informed consent and were given a brief training session on how to use the discussion software. Participants were told that their comments would be summarized and disseminated to key political officials and news outlets. Then individual participants went to dorm rooms equipped with computers, keyboards, speakers, and microphones and took a Web-based presurvey. Next, they were given a 40-minute "library session" to learn more about the four policy topics provided on the computers followed by a break, 90 minutes for "deliberation," and lunch. On each day, participants had been randomly assigned to predefined treatment groups. Median group size was 8 persons, with a range of 5 to 12 persons. The library session, break, and deliberation were repeated in the afternoon, and this was followed by the second survey. In that confidential survey, participants voted on the solution they preferred. Then participants were paid and debriefed.

The briefing documents the participants reviewed during the library sessions included pro and con positions on each of the four policy solutions, five news articles from the local newspaper on the issue of school consolidation, a lengthy report from a commission established by the mayor to research and propose solutions to the problem of underutilized schools, a report by the Rand organization on the state of public schools in the city, and four academic articles dealing with pros and cons to some of the solutions, as well as maps of the public school locations in the city and tax information in the region.

The key results presented in this article focus on the 179 participants in the online deliberation condition (actual deliberations were conducted in 23 groups of median size

eight). The project also included face-to-face and "individual contemplation" conditions. In the individual contemplation condition, participants did not deliberate but were asked to reflect on the materials. In the online condition, software developed for the project allowed participants to speak to each other through their computers, similar to teleconferencing software.[3] Due to recording errors, the face-to-face deliberations could not be content analyzed.

The deliberations were conducted with moderators. They played a minor role, serving primarily to set the ground rules for discussion at the start and to ask questions to keep the conversation going. Unlike some deliberation projects where participants are instructed to reach consensus, which might have an effect on levels of agreement and disagreement, this experiment explicitly told participants that they *did not* need to come to consensus. Instead, their goal was to "discuss the issue" of underutilized schools (see Appendix A for a transcript of instructions participants were given). The type of moderator input in the discussion was also coded (Cohen's kappa = .97). Overall, the moderators participated little in the deliberations once they got going. Their contributions constituted less than 2% of the total number of thoughts expressed in the deliberations. Their participation generally consisted of asking a question if the conversation had stalled. Only 2% of the total number of thoughts expressed by moderators highlighted agreements or disagreements in the group, suggesting that their participation did little to contribute to the amount of agreement or disagreement expressed by participants.

Measures

Agreement and Disagreement. Agreement and disagreement in the deliberations were measured through content analysis, following guidelines established by Krippendorff (2003) and Neuendorf (2002). Following strict coding rules, two human coders typologized each participant's thoughts into one of 19 categories. The "thought type" category included whether the thought was an opinion, a fact, a question, an agreement, or a disagreement or was problem, process, or social talk (Cohen's kappa = .8). Because participants could speak for up to 3 minutes, they often would introduce more than one thought during a turn. Hence, unlike other coding projects that use the turn as the unit of analysis (see, for example, Meyers, Brashers, & Hanner, 2000), this project further broke the turns into thoughts. A thought was defined as a unique idea signaled by orienting talk from the speaker. Orienting talk refers to cues provided by the speaker that help listeners know that a change in topic is coming. Agreement was defined as thoughts that expressed alignment with what a prior speaker said ($n = 528$; $M = .10$, $SD = .3$). It was operationalized as a thought signaled by phrases such as "I agree," "that's right," and "true." Disagreement was defined as a thought that signals disagreement with what a prior speaker said ($n = 351$; $M = .07$, $SD = .24$). Cues of disagreement included "I disagree," although rarely did participants express disagreement in that way. More common were expressions of agreement followed by "but," which constructs the disagreement more politely than "I disagree" (for a detailed description of the content analysis of these data, including operationalizations of the unitizing process, see Stromer-Galley, 2007).

Deliberation Satisfaction, Reevaluation, and Future Deliberation. Four of six measures from Schweiger et al.'s (1986) research on work groups were adapted for this study. Using a 7-point Likert-type scale of strongly agree to strongly disagree, participants were asked about their willingness to work with their deliberation group in the future ("I would be willing to work with this group on other projects in the future") ($M = 2.3$, $SD = 1.07$; the

range for all variables in this section is −3 to 3, $N = 179$), whether they were satisfied with their group's recommendations ("I am satisfied with my group's recommendations") ($M = 1.8$, $SD = 1.07$), and two questions concerning whether the discussions helped them uncover valid recommendations and assumptions they had not considered ("The group decision process made me critically reevaluate the validity of the assumptions and recommendations that I held personally" [$M = 1.8$, $SD = 1.10$] and "The group decision process uncovered valid recommendations and assumptions that I had not considered" [$M = 1.4$, $SD = 1.45$]. In addition to these questions, participants were asked whether they "would recommend using deliberations to address community issues" ($M = 2.3$, $SD = 1.04$), whether they "would be willing to participate in a second phase of the deliberations at home" ($M = 2.1$, $SD = 1.28$), and whether they "learned a lot from the discussions" ($M = 2.2$, $SD = .98$).

Results

Confirmatory Factor Analyses of Deliberation Evaluations

A confirmatory factor analysis was conducted on the outcome measures of the deliberation experience using the statistical program R. This was done to confirm which survey questions loaded on a given factor. Schweiger et al. (1986) conducted only an exploratory factor analysis. We predicted that the satisfaction with group recommendations and perceived learning from the discussions questions would load on a present satisfaction factor; willingness to work with the group in the future and a desire to participate in another deliberation at home would load on a future engagement factor; and the perception that the deliberation process made participants reevaluate their assumptions and helped them uncover valid recommendations would load on a reevaluation factor. The confirmatory factor analysis showed an excellent fit for this model.[4] Subsequent analyses are based on measures of the three factors comprised of weighted averages of the variables. The weights were determined by factor score regressions. The reliabilities of the satisfaction, future engagement, and reevaluation factors thus created are estimated as .70, .75, and .63, respectively.

Mean Participant Evaluations, Satisfaction, and Dissatisfaction

Participants evaluated the deliberations favorably. On a scale from −3 (strongly disagree) to 3 (strongly agree), average participant satisfaction with the current deliberations was 2.1 ($SD = .90$), reported motivation to participate in future deliberations was 2.3 ($SD = 1.01$), and perception of the amount of reevaluation of policy opinions was 1.6 ($SD = 1.06$). On average, each participant expressed agreement three times and disagreement two times. Disagreement, then, occurs a third less often than agreement. In a *typical* eight-person discussion group, agreement would occur 23 times and disagreement 16 times, on average. The agreement and the disagreement frequencies look exponentially distributed, with larger numbers expressing zero agreement or disagreement and rapid dropoff as the number of agreements or disagreements rises. On the other hand, few people expressed both zero agreement and zero disagreement (26 of 179 participants, or 15%).

Effects of Agreement and Disagreement on Evaluations of Deliberation

Agreement and disagreement between participants during the course of online deliberation appear to affect the three deliberation evaluations, and the effects are nonlinear in

Table 2
OLS regression analyses of the effect of individual and others' agreement
and disagreement on three deliberation evaluations

	Present satisfaction: Unstd. coefficient (*SE*)	Reevaluation: Unstd. coefficient (*SE*)	Future engagement: Unstd. coefficient (*SE*)
Agreement (individual)	−.07 (.06)	.02 (.03)	.10*** (.03)
Agreement squared (individual)	.019*** (.005)		
Disagreement (individual)	.09† (.05)	.01 (.04)	.10*** (.03)
Agreement by Disagreement	−.019* (.008)		−.012** (.004)
Others' agreement	.12** (.04)	.02* (.009)	.01 (.01)
Others' agreement squared	−.002* (.001)		
Others' disagreement	−.002 (.01)	−.005 (.02)	−.002 (.01)
Age	−.04 (.06)	−.09 (.07)	−.10* (.04)
African American	.04† (.02)	.02 (.02)	−.002 (.03)
Male	−.004 (.02)	.007 (.02)	.009 (.02)
Income	−.06 (.07)	−.03 (.06)	.05 (.05)
Education	−.09 (.06)	.04 (.07)	.05 (.06)
Constant	1.13* (.48)	1.18** (.45)	1.58*** (.34)
Adjusted R^2 (*SE*)[a]	.13; (.84)	.002 (1.06)	.08 (.97)

Note. Analyses were conducted in R and Stata. The *N* here reflects only people in the online discussion condition for which discussion transcription was feasible. All continuous variables have been placed on a 7-point scale to facilitate comparison of unstandardized coefficients.

[a]Regressions were also tested with disagreement squared, group disagreement squared, and group agreement by disagreement, but these never proved significant.

†*p* < .10; **p* < .05; ***p* < .01; ****p* < .001 (*p* values and standard. errors are robust and take into account potential clustering by discussion group as well as hetereoskedasticity).

interesting ways. Table 2 shows regressions that explain the deliberation evaluations in terms of demographics and individual and others' agreement and disagreement—that is, amount of agreement and disagreement expressed by the participant and amount of agreement and disagreement the participant observed on the part of others in the discussion group. Table 2 allows for nonlinear effects by including a full set of nonlinear terms for individual agreement and disagreement and another set for others' agreement and disagreement. (Some terms do not appear in the table. As explained earlier, we follow standard practice by dropping nonlinear terms that prove nonsignificant.) 420

We will consider hypotheses here in a different order than in the Alternative Hypotheses section, because significant higher order terms alter the meaning of main effects and must therefore be considered first. Two aspects of Table 2 support the disequilibrium hypothesis. For both present satisfaction and future engagement, there is a significant negative interaction of individual agreement and disagreement. What this means is that high agreement and low disagreement, or vice versa, affect the outcome more strongly than 430 balanced combinations of agreement and disagreement. 425

The substantive meaning of these negative interactions supporting the disequilibrium effect can be better understood by inserting observed values of agreement and disagreement

into the estimated model of the effects of these variables and computing the dependent variable (e.g., satisfaction= -.07A(gree) + .09D - .019A*D +.019A^2). The strongest effects of the negative interactions occur when individual agreement is very low and disagreement very high; or vice versa. For present satisfaction, the impact of agreement and disagreement (including nonlinear terms) for these two variables set to (0, 0) is 0, but for (1, 7)—the most extreme disagreement value with agreement near zero—the effect on satisfaction is .43. Satisfaction is on a scale of −3 to 3, so this represents a modest improvement as disagreement rises at low levels of agreement. The effect is not very robust to increases in agreement: For instance, at (2, 7) the impact on satisfaction is only .28. At a balanced value of agreement and disagreement (3, 3), the effect on satisfaction is a negligible .04, showing that balance is not helpful. Examining the extreme of high agreement/low disagreement at (7, 0), the effect on satisfaction is .41, but at (7, 7) it is .11. Again, higher disequilibrium leads to more of an effect. There are a very small number of even more extreme observations for which the effect on satisfaction is more appreciable. For example, at (10, 1) the effect on satisfaction is 1.05 (but at 10, 10 it is .16). The significant squared agreement term exerts a small accelerating effect that is most noticeable as agreement reaches very high values attained by a handful of observations. The total estimated impact of agreement and disagreement on satisfaction, across all actual observations, works out to an average effect of .10. For the 13 observations for which agreement is in its upper quartile and disagreement is in its lower quartile, the average effect is .42. For the five observations with disagreement high and agreement low, the average effect is .30.

Agreement and disagreement have more of an impact on future engagement. At (0, 0) the effect is zero, but at (1, 7) it is .75, and at (10, 1) it is .98. The total estimated average effect of these variables on future engagement across all observed values is .39. For high (upper quartile) and low (lower quartile) combinations of agreement and disagreement, the average effects are .7 and .5, respectively. In the case of future engagement, the interaction of agreement and disagreement has less of a suppressive effect than for satisfaction. At (3, 3), the effect on engagement is .5, while at (0, 3) it is .31—which seems to show no suppressive effect. Suppression can be seen by distributing a constant sum across agreement and disagreement. If six points (3 + 3) are to distribute between these two variables, it remains best to distribute them as (6, 0) or (0, 6), which respectively have an effect of .6 and .63, rather than the even (3, 3).

Thus, the disequilibrium hypothesis is confirmed. Either high-low or low-high combinations of individual agreement and disagreement have more positive effects on present satisfaction and future engagement than do more balanced combinations of agreement and disagreement for a constant sum of agreement and disagreement. Put another way, people whose behavior strongly displays either devil's advocacy (high individual disagreement, low agreement) or sociability (high individual agreement, low disagreement) have the most positive evaluations. Neither the balance nor the reevaluation hypotheses are supported.

Several features of Table 2 support aspects of the sociability hypothesis. Reevaluation of one's views increases only in response to others' agreement (the total agreement a given respondent witnessed among other participants), an unexpected finding that will be taken up in the discussion. The total estimated average effect of others' agreement on reevaluation across all observed values is .5. The most powerful effect found, however, is that of others' agreement on present satisfaction. Others' agreement has a large positive coefficient, while the square of others' agreement has a small negative coefficient. The negative square exercises a mild ceiling effect on the influence of others' agreement as

that variable reaches very large values. As others' agreement goes from its lowest value to its first quartile, median, third quartile, and highest value, the effects on satisfaction are .63, 1.3, 1.52, 1.67, and 1.52, respectively. The range of others' agreement is substantial (6 to 37), and many individuals witnessed considerable agreement (median of 20). Unsurprisingly, then, the total estimated average effect of others' agreement across all observed values is 1.43.

There was no support for the avoidance hypothesis. Neither individual disagreement nor group disagreement show a significant negative coefficient in any of the regressions in Table 2. Indeed, individual disagreement proves significantly or nearly significantly *positive* in two cases. Participants' evaluations of the deliberation were not adversely affected by disagreement, except perhaps for the modest reductions the disequilibrium findings suggest in people with high levels of agreement.

Consequences of Participant Evaluations of Deliberation

This section considers the question of whether participant evaluations of deliberation matter. Table 3 shows that these evaluations do matter for three outcomes. As before, all continuous variables are on a 7-point scale to facilitate comparison of unstandardized coefficients. Column 2 of Table 3 examines whether, as stipulated by H2, present satisfaction increases motivation to participate in future deliberations. Satisfaction with the current deliberation contributes greatly to motivation to participate in the future.

Column 3 examines H1—that positive evaluations enhance decision legitimacy. Legitimacy was measured by asking participants to what extent they believe the deliberators' policy conclusions should determine public officials' decisions (range = 0−6;

Table 3
Regression analyses of three outcomes

	Future engagement: Unstd. coefficient (*SE*)	Decision legitimacy: Unstd. coefficient (*SE*)	Decision ambivalence: Unstd. coefficient (*SE*)
Present satisfaction	.39*** (.08)	.48*** (.08)	−.15* (.07)
Reevaluation	.20** (.07)	−.08 (.05)	.05 (.05)
Age	−.03 (.04)	.09* (.04)	.13* (.06)
African American	−.004 (.13)	−.02 (.16)	.03 (.16)
Male	.05 (.09)	−.001 (.09)	.03 (.16)
Income	.06† (.03)	.03 (.03)	−.07 (.05)
Education	.06† (.04)	−.08* (.04)	−.09 (.07)
Decision knowledge			−.21** (.08)
Constant	.85** (.27)	.89* (.28)	n/a
Adjusted R^2 (*SE*)	.23 (.87)	.16 (.90)	.07 (n/a)

Note. The first two columns of output are for OLS regressions; the last column is for an ordered probit regression that better takes into account nonlinearity. All continuous variables are on a 7-point scale. Analyses were conducted in R and Stata. The *N* here reflects both online and offline discussants. There is negligible difference between these groups.

†$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$ (*p* values and standard errors are robust and take into account potential clustering by discussion group as well as hetereoskedasticity).

$M = 4.8$, $SD = .98$). Satisfaction with the current deliberation substantially increases decision legitimacy.

The final column of Table 3 shows that present satisfaction reduces decision ambivalence (H3), measured as the number of policies for which participants selected the neutral category rather than voicing agreement or disagreement (range = 0–4; $M = .5$, $SD = .82$).[5] 505

Discussion

Participants evaluations of a deliberation experience are related to two simple, observable features of deliberative discussion: the numbers of expressions of agreement and of 510 disagreement. Prior research on everyday political discussion suggests that disagreements might have a negative effect on satisfaction with the deliberation experience and on willingness to participate in future deliberations. Our study finds no support for this avoidance hypothesis in a deliberative context. Disagreement does not dampen satisfaction or motivation. This finding runs contrary to the conclusions of some scholars who infer that people prefer to avoid politics (Eliasoph, 1998; Hibbing & Theiss-Morse, 2002; Mutz, 2006). Such research has not empirically examined organized citizen deliberations. 515 Perhaps people are willing to tolerate disagreement in this context because they view it as necessary to achieve political ends. Alternatively, perhaps those who come to deliberations react differently to disagreement than the rest of the population. In that case, the findings suggest it is possible to involve a politically substantial fraction of the public in organized deliberation without the adverse effects predicted by some (Hibbing & 520 Theiss-Morse, 2002).

Though the avoidance hypothesis does not prove correct for participants generally, the evidence here for the disequilibrium hypothesis still allows for the possibility that avoidance might be true for some participants. Satisfaction and future engagement are greater when an individual agrees often and does not vocalize disagreement *or* when a 525 person disagrees often and avoids agreeing. An explanation for this negative interaction is that different people may understand the norms of the deliberative context differently. Some may operate on a politeness norm for deliberative conversation, which causes them to favor high agreement and low disagreement. Other individuals may have a rational critique norm that finds high disagreement and low agreement more satisfying. If this 530 explanation is correct, people might prove responsive to contextually specified norms. Perhaps a rational critique norm could be instilled in more participants through instructions at the start of deliberations.

Research suggests that agreement confirms affinity between speakers, which is a desirable component of an interaction. Our study supports the sociability hypothesis in 535 showing that the number of agreements the individual observes among other participants has the largest total effect on satisfaction with the deliberation experience. Importantly, this effect is substantially more potent than the disequilibrium effect for satisfaction. Even if the disequilibrium effect implies that a few participants fit the avoidance hypothesis, the positive effect of experienced agreement greatly outweighs 540 the negative effect of avoidance. Others' agreement also positively affects reevaluating one's own opinions.

It might be expected that being exposed to or participating in a disagreement would contribute to the perception that a person has reevaluated his or her assumptions and beliefs about the topic of discussion. Contrary to expectations, we found that *agreement*, 545 not disagreement, enhances perceived reevaluation, albeit modestly. This seems contrary to previous findings and theory that disagreement should enhance cognitive processing of

the issue at hand. Perhaps people are not good at judging whether they have indeed reevaluated their position. Alternatively, others' agreements might cause people who initially disagree with the group to reevaluate their positions. This is an area for further research. 550

This article, like much of the related literature, treats agreement and disagreement in discussion as causally influencing evaluations of that discussion. A critic, however, may contend that perhaps agreement and disagreement are behavioral manifestations of evaluations. A person who evaluates a discussion favorably may be more likely to express 555 agreement in that discussion. This hypothesis does not, however, explain how the agreement and disagreement a person *witnesses* in discussion has the kind of influence on evaluations demonstrated here. These witnessed agreements and disagreements have broadly similar effects to an individual's expressed agreement and disagreement, suggesting that such expressions affect evaluations. Also, the evidence for the disequilibrium 560 hypothesis, in which both high-low and low-high combinations of agreement and disagreement are associated with positive evaluations, cannot readily be explained as a manifestation of evaluations.

The second part of our analysis shows that participant evaluations of deliberation matter. Higher satisfaction is associated with appreciably increased reported motivation to 565 participate in future deliberations, increased perceived legitimacy of deliberators' policy choices, and decreased opinion ambivalence. Perceived reevaluation of personal opinions also increased reported motivation to participate in the future. The possibility of a more deliberative democracy may therefore be contingent on positive evaluations of deliberation, which make participants more motivated and decisive and confer greater legitimacy 570 on decisions.

The findings here may have implications for the practice of democratic deliberation, though any implications drawn require further testing. Motivation to deliberate, opinion legitimacy, and opinion decisiveness all are affected favorably by satisfaction with the deliberation. Satisfaction, in turn, is most powerfully affected by observed agreement 575 within groups. Perhaps, then, instructions to participants to be sure to verbalize when they agree with others can promote these positive effects. Deliberation practitioners may also find it useful to experiment with enforced devil's advocacy for some purposes. Devil's advocacy may be useful for more fully exploring all sides of an issue, and the results here suggest that people who show high disagreement and low disagreement experience higher 580 satisfaction with a deliberation—though not as much as those who observe high levels of group agreement.

Conclusion

585

Past deliberation research has been divided on whether people typically like or dislike deliberations. Deliberation practitioners and academics who study carefully organized deliberations believe, on impressionistic evidence, that people respond favorably to deliberation (Fishkin, 1997). Others who study everyday political speech and informal public discussions believe deliberation may prove frustrating and anger provoking (Hibbing & Theiss-Morse, 2002; Mendelberg & Oleske, 2000).

Q7

Our research clearly shows that, overall, people found our organized deliberation 590 experience highly satisfying. More important, framed as a communication phenomenon, we found that specific communication acts—agreements and disagreements—are significantly related to how participants view their deliberation experience. The more participants agree with each other, the more satisfied they are with the deliberation, and the more

they perceive they are reevaluating their thinking. Importantly, expressions of disagree- 595
ment *do not* generally harm these evaluations—contrary to an important view in the literature
based on research on everyday political discussion. Finally, positive evaluations matter
because they increase reported motivation to participate in future deliberations, enhance
the legitimacy of collective decisions, and decrease decision ambivalence.

Notes   600

1. Schudson (1997) discusses the differences between sociable interaction and problem solving   Q8
conversation. Sociable interaction aims primarily at getting along, whereas problem solving discus-
sions seek solutions to shared problems.

2. Price and Cappella's project started with an effective sample of the population from which
its discussants were drawn of about 3,686. The number of people who participated in any discussion 605
over the course of the year was 543, and the average number of people who participated in a given
discussion was 305.

3. To manage turn taking, participants had to insert themselves into a speaking queue. During
their turn, participants could speak for up to 3 minutes. The time limitation was intended to prevent
anyone from dominating the discussion. The software showed a static photograph of participants. In 610
addition, they could provide nonverbal cues when they were not speaking, including smiley faces
and thumb's up or thumb's down emoticons.

4. Recommending using the deliberations to address community issues loaded on the present
satisfaction and the future engagement factors and was therefore removed from subsequent analyses.
For this model, the goodness of fit index (GFI) was .98; the adjusted goodness of fit index (AGFI) 615
was .95; the root mean squared error of approximation (RMSEA) was .056 with a 90% confidence
interval of .02 to .09; the Bayes information criterion (BIC) was −37.6; and the Hoetler's N was 317.

5. This analysis utilized ordered probit regression, which better takes into account skew in the
data and nonlinear effects than would OLS. OLS analyses, however, yield the same substantive
results, but with weaker coefficients.   620

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Appendix A: Sample Transcript of Moderator-Delivered Participant Instructions

Alright, good morning everyone. I'd like to welcome and thank you again for participating today in our survey. Before we start, I'd like to see if everyone can hear me. If you can hear me, please change your icon to thumbs up. [Silence.] If at any time during today's discussion you run into any technical difficulties, please bring them to the attention of the room assistants who should be walking around throughout today's discussion.

Before we get started, I'd like to review with you the sequence of events that are going to be coming up this afternoon. Today's online discussion is schedule to last until 12:45. At that time, we'll have a lunch break until 1:15. That's the time when the second online library session is scheduled to begin. You'll have another break at 1:45, and then the second round of deliberations will begin at 2:10 this afternoon. At 3:40, you'll start the second survey, and by 5:15 you should be all ready to check out. Now, I have a few ground rules that I'd like to go over before we begin. You're here to discuss the four policy issues you will be voting on at the end of the day. We ask that people try to stay on topic, though sometimes talk that seems off topic is ultimately relevant. You should discuss the issues among yourselves. I'm here to make sure the discussions go smoothly, not to give opinions. Control of the discussions is in your hands. I'm only here to make suggestions and to make observations relevant to ensuring the discussion going smoothly. I am not a discussion leader. You are here to talk to each other and not to me.

Now there are a lot of ways of holding a good discussion. One way of doing a discussion that you might want to consider for today is to loosely divide the conversation into three parts: brainstorm, analysis, and synthesis. The brainstorm process is to get people's ideas on the table. The analysis is to get different points of view on an idea. Think critically about the idea. Figure out what the cost/benefits are for each of the four policy alternatives. And synthesis is to get a broad picture about what people agree and disagree on and why. Okay, let's begin. You can start wherever you like. But it might be helpful to start with people describing what the four policy options are and what the differences are between them. Please keep in mind that the four options are not mutually exclusive. You can for example be against school closings but be in favor of, say, K–8 replacing middle schools.

Anyone who wishes to begin speaking may do so.

Appendix B: Details on Coding Expressions of Agreement and Disagreement   Q10

The descriptions below are taken from the actual codebook coders used to identify expressions of agreement and disagreement.

Agreement: A signal of support with something a prior speaker said, including the moderator. These are statements such as "I know," "I agree," "That's right," "I *also* think that regional choice is a good idea" (following a prior speaker who said regional choice was a good idea), or "I think mentoring is a good/tremendous/fantastic/excellent idea" (after a prior speaker suggested that the schools do more mentoring). The statement of agreement is the opinion claim. Note that agreeing with a choice is not coded as agreement: "I agree with the K–8 structure" is not agreement because it does not agree with another speaker but with the choice.

Disagreement: A statement that signals opposition with something a prior speaker said, including the moderator, as follows:

- "I sort of disagree," "I'm not sure about that," "That's not right."
- Often, a disagreement is signaled by "well" before proceeding with what is being disagreed with.
- Statements may start with "I agree with that, *but . . .* " or include a "but" statement that is meant as a refutation *of something a prior speaker said*.
- May repeat part of the prior speaker's thoughts while changing small elements to signal disagreement (A = "The consequence of closing schools is layoffs, and that will make people mad"; B = "The consequence of closing schools is layoffs, and that is just how it has to be").
- May start with an "I know that you . . . " acknowledging the other speaker's position, but then offering the point of disagreement. For example: "I know that you don't like it when I say this, but . . ."
- May start or end with "no disrespect to your beliefs, but . . ." or "I respect your views, but . . ."
- A participant may offer counterinformation to what a prior speaker said. If this does not carry any of the prior semantic phrases from the prior turn, then it is not coded disagreement. However, if a semantic is carried, then it should be coded as disagreement. For example, if a participant argues "smaller class sizes will certainly guarantee that students perform better," and another participant says, "I've worked in a magnet school, where we had really large classes," that would not be coded as disagreement, since the participant isn't doing anything to clearly signal disagreement.

However, if the second participant said, "I've worked in magnet schools with fairly large class sizes, and small class size does not always guarantee good student performance," then it would be coded disagreement. The signal is in the "does not always guarantee good student performance." "Guarantee," "student," and "performance" are shared semantics, and there is a "not" signaling the disagreement.   795

- If a participant notes that she or he is playing "devil's advocate," then code as disagreement and code the valence offered in the argument (even if it is known that the argument is counter to prior expressed opinions).