The potential of deliberative reasoning: Patterns of attitude change and consistency in cross-cutting and like-minded deliberation

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Abstract

Previous studies have found that deliberative practices such as minipublics produce opinion changes among participants. Nevertheless, the underlying mechanisms and whether these conform to deliberative ideals have received much less attention. This is problematic since research on public opinion and political psychology suggests that political opinions often are unstable or driven by prior notions. For this reason, we examine the underlying mechanisms of change in opinions and attitude consistency. We do so with data from an experiment with two deliberative treatments—cross-cutting and like-minded discussions—as well as a control group, where no deliberation took place to be able to determine whether deliberation actually cause the observed changes. The results suggest that participants in cross-cutting deliberation are more willing to change opinions, even when they have prior experiences with discussing the topic at hand, which is in line with deliberative theory, but attitude consistency is largely unaffected by the deliberations.

Keywords: Deliberative democracy, Opinion change, Political attitudes, Experimental research, Immigration

Introduction

According to deliberative theory, being deliberative implies being open to suggestions, willing to consider diverging viewpoints, and being prepared to reevaluate an opinion in the light of new evidence (Chambers 1996, p.84; Weithman 2005, p.276). While a number of studies show that discussion forums invoking ideals of deliberation will change the policy opinions of participants (e.g. Fishkin, 2009; Hansen & Andersen, 2004; Luskin, Fishkin, & Jowell, 2002; Setälä, Grönlund, & Herne, 2010) , opinion changes do not as such inform us about the individual reasoning processes shaping these outcomes (Lindell et al., 2017, p. 24). In fact, opinion research from related fields show that opinion changes can be a result of inattentive respondents (Converse, 1964), or even failures of human reasoning (e.g. Kunda, 1990). Hence, we need to be careful when we interpret opinion changes in deliberative forums. The purpose of this study is to examine to what extent opinion changes in a deliberative experiment reflect internal deliberation, or a deliberative way of reasoning.

Given that reasoning takes place within individual minds measuring 'deliberation within' (Goodin, 2000) is difficult and any measurements will be indirect at best. That said, several studies show that we can make inferences about internal deliberation by looking at patterns of individual level opinion developments. Farrar et al. (2010) and List et al. (2013) present evidence of increased proximity to single-peakedness, i.e. improved ordering of individual policy opinions, as result of taking part in deliberation. Moreover, a recent study by Baccaro et al (2016) show that different discussion modalities can explain changes in individual opinion formation and Gastil and Dillard (1999) use inter-item attitude scales to estimate how deliberation affects the sophistication of individual political judgements. In line with the aforementioned studies our aim is to make inferences about internal deliberation using similar measures of individual level opinion developments. The novelty in our approach compared to previous studies, lies mainly in the possibility the to examine individual level opinion developments in two different deliberative contexts and comparing them to a control group.

To capture elements of deliberative reasoning, or opinion developments that can be seen as indicative of such, we use two measures of opinion change: absolute (or gross) change (Luskin et al., 2002, p. 471) and changes in attitude consistency (e.g. Gastil & Dillard, 1999, p. 8). Furthermore, previous research suggests that the amount of disagreement is likely to affect the extent and type of opinion changes (Delli Carpini et al. 2004 Visser & Mirabile, 2004; M. Wojcieszak & Price, 2010). To be able to make conclusions about the causality and origin of these changes we compare opinion changes in like-minded and cross-cutting deliberation to those in a control group.

In connection to this, we also examine the influence of 'undeliberative reasoning' in the experimental forum. Studies of motivated reasoning suggest that prior beliefs and information hamper the ability

to evaluate new information in a deliberative manner (Molden & Higgins, 2005; Taber & Lodge, 2006). While this proposition has been confirmed in several studies, it remains unclear to what extent it affects different types of deliberation. We therefore examine differences in how issue awareness affects opinion changes in the deliberative settings. The control group consisted of individuals who volunteered to take part in the deliberations but did not do so. Thereby, we can ensure that the observed differences in the willingness to revise opinions and changes in opinion consistency are an effect of taking part in the deliberations and not merely random changes of undecided or inattentive participants.

The experimental deliberative forum that constitute our case was arranged in Finland 2012 and concerned attitudes to immigration. Our results show that cross-cutting deliberation induces openness for change, while consistency remains largely unaffected by deliberation. We also find that having engaged with issue previously can increase the willingness to change opinion in cross-cutting groups and that knowledge has a weak positive effect on consistency in like-minded groups. While our findings suggest that there is a potential of deliberative reasoning to be tapped with the help of deliberative designs, the effect is relatively limited, and it can be questioned whether it fulfills even the more pragmatic goals of deliberation. The analyses also demonstrate that measured opinions are fickle, which is why it is imperative to include a control group to establish causal effects.

Deliberative reasoning and opinion change

According to the Habermasian ideal preferences are transformed through an argumentative process, where reasons for different viewpoints are exchanged. During the deliberation, participants undergo a successive process of rejection and acceptance of arguments. Arguments are rejected when participants cannot accept them on a rational basis, while arguments that find rationally motivated consent are accepted (Habermas, 1987). Thus, a continuous force of evaluations and corrections harmonizes the individual goals of the participants and makes them revise their opinions to correspond with arguments all find acceptable on a common rational basis (Cohen, 1997, p. 74).

Several studies have found that deliberation induces opinion changes among participants. The studies involve deliberations on a rich variety of topics, including the British criminal justice system (Luskin et al., 2002), ethnic divisions in Northern Ireland (Fishkin, 2009; O'Flynn, 2006), nuclear power plants in Finland (Setälä et al., 2010), and attitudes toward the European common currency in Denmark (Hansen & Andersen, 2004). The magnitudes of the changes vary (Hansen & Andersen, 2004; Luskin et al., 2002; Setälä et al., 2010), but deliberation have been found to affect the issue positions of the participants more often than not (see Merkle, 1996 for an exception). These studies provide us with

some idea of the direction and size of opinion changes in deliberative exercises, do not tell whether these outcomes are the result of deliberative reasoning processes (Lindell et al., 2017, p. 24).

To understand whether the opinion changes are reflective of internal deliberative processes, we need to know something about the quality of the opinion changes, not merely the quantity and direction. According to Benhabib (1996), deliberation induces individuals to reflect on their preferences, beliefs and presuppositions, which may allow them a greater level of conceptual clarity about their choices and preferences. In a similar vein, Knight and Johnson (2011, pp. 136–7) argue that deliberative processes can "help reveal unrecognized alternatives by commanding participants' attention or capturing their imagination and highlight inconsistencies, ambiguities or deficiencies in the reasoning of the participants". This proposition is supported by empirical research showing that taking part in deliberative polls can bring about greater proximity to single-peakedness, i.e. improved ordering of individual policy preferences (Farrar et al., 2010; List et al., 2013).

It is important to note that opinion changes can reflect internal deliberation even when there are no uniform changes at the aggregate level. Participants in a deliberative process could very well acquire new understandings of the issues involved, and thereby alter their original positions, without necessarily being able to find agreement with others on the best course of action (Knight and Johnson 2011). In line with this argumentation, Gastil et al. (2008, p. 25) note that many important individual-level attitude changes take place below the surface of collective changes and that patterns of aggregate opinions might "obscure real and meaningful changes in the structure of participants' individual attitudes". Findings from a study by Himmelroos and Christensen (2014) shows that substantial individual level opinion changes can occur even when the collective (mean) changes in one direction or the other are miniscule, which means that that opinion changes during deliberation are not necessarily uniform. Similar findings are also reported by Andersen and Hansen (2007).

That said, merely focusing on individual opinion patterns does not resolve the challenge of knowing whether opinion developments indicate a deliberative process of reasoning. Public opinion research has long suggested that people make up answers to survey questions on the spot rather than base them on deeper-lying ideological predispositions. Converse's *The Nature of Belief Systems in the Mass Public* (1964) documents the lack of stability in political attitudes over time. Converse examined panel data collected over a four-year period, and found that, even on widely discussed public issues, there were low levels of correlation between variables across waves and surprisingly weak associations between ideology and relevant policy positions, suggesting that large portions of the electorate do not have meaningful beliefs. Zaller (1992) also rejects the view that people possess a true attitude or a single stable opinion on issues, arguing that unstable answers suggest that most people answer

survey questions in an inconsistent manner that does not reflect ideological beliefs. These findings raise doubts about the extent to which the observed changes following deliberation are actually the result of new insights or merely reflect random noise due to incoherent answers to the survey questions.

More recent research in political psychology suggests that the portion of the population that do have an opinion will hold on their convictions even when exposed to contradictory information that ought to convince them otherwise (Nyhan & Reifler, 2010; Redlawsk, Civettini, & Emmerson, 2010). This is part of a phenomenon known as motivated reasoning, i.e. reasoning guided by prior beliefs and affect (Molden & Higgins, 2005; Taber & Lodge, 2006). The work on motivated reasoning suggests that people with strong priors tend to evaluate supportive arguments as more compelling than contradictory arguments. Motivated reasoners also tend to seek out confirming over disconfirming information and will scrutinize opposing information more carefully than confirming arguments (Taber & Lodge, 2006). This again raises question about whether people actually will engage in deliberative reasoning even if they have the opportunity.

In sum, it is important consider the type and nature of opinion change carefully if we are to understand whether they reflect elements of deliberative reasoning. Following Benhabib (1996) and Knight and Johnson (2011) we are mainly interested in two kinds of non-directional developments in individual attitudes: (a) whether *individuals become more inclined to change their opinions* and (b) whether *their opinions become less inconsistent or ambiguous*. This approach differs from other studies examining individual level opinion changes in deliberation that focus on the direction of change (Barabas, 2004; Wojcieszak & Price 2010, Wojcieszak, 2011). These directional measures of opinion change are interesting and can inform us about e.g. polarization, but our approach is more focused on certain normatively desirable deliberative traits, such as the willingness to consider different views and reflect upon the relationship between different opinions.

Context and reasoning

In order to know why opinion changes occur we need to know when and where they occur. The notion that context is importance for the productive reasoning is by no means new. Lupia et al. (2000, p.289) argue that context can both guide and constrain the ability to make informed choices. Similar claims has been advanced by Karpowitz et al. (2012, p.545) and Delli Carpini et al. (2004, p. 332), who suggest that the success of deliberation is likely dependent on the context in which it takes place.

The notion that people's attitudes may be influenced by the attitudes held by others in their social environment is well established in social psychology research (Visser & Mirabile, 2004, p. 780). Past

research has demonstrated that the presence of attitudinal diversity in the social environment increases a person's openness to attitude change (Levitan & Visser, 2008). When people are exposed to dissimilar views they may come to recognize that issues are not black and white and that there are merits to both sides (Meffert, Guge, & Lodge, 2004). If a person's social environment on the other hand is characterized by attitudinal congruity or consensus it will increase individual-level attitude certainty and strength (Sunstein, 2002). In like-minded groups - where all participants hold broadly similar views from the outset – participants are likely to become more confident in their opinions as they find support for their preexisting views without having to face criticism from those who disagree (Sunstein, 2009, p. 22; Vinokur & Burnstein, 1978, p. 873).

However, deliberative practices present participants with an unprecedented opportunity to explore their own and others' opinions, which means that the implications may well differ from those found in non-deliberative discussions. Contrary to studies on reasoning and group behavior in political and social psychology, deliberative mini-publics rely on structured and facilitated group discussions designed to incentivize deliberative reasoning and counter detrimental group effects. Hence, some scholars have warned against relying too heavily on findings from seemingly related fields (Dryzek, 2007). The merits of deliberation should be judged by research on group discussions that are guided by the specific terms set by deliberative theory, not by research on discussions that do not include similar terms of conduct.

In one of the few studies that have experimentally tested whether facilitated deliberation differs from other types of group discussions Strandberg et al. (2017) find that implementing deliberative norms in group discussions can alleviate group polarization. This result suggests that reasoning biases is less of a problem in discussions with deliberative norms than in discussions without such norms. That said, Barabas (2004, p. 696) finds that more knowledgeable participants in a deliberative forum were more likely to reinforce their priors, while Wojcieszak (2011) finds that participants with strong views on the issue experienced polarization when taking part in a deliberative forum on sexual minority rights in Poland. This again suggests that even structured and facilitated deliberation is not immune to the reasoning failures uncovered in studies of motivated reasoning. One reason for these conflicting findings may be explained by the fact that predispositions and context can interact in complex ways (Sniderman, Tetlock, & Elm, 2001, p. 282). Hence, it is important to also be aware of the interaction between context and issue awareness, since the effect of issue awareness may well differ depending on group composition or other contextual factors.

Hypotheses

Despite the relatively large number of studies looking at preferences change induced by deliberation there are valid reasons to take a second look at the relationship between deliberation and opinion change. Drawing on the theoretical literature on deliberative democracy and previous empirical findings we find four insights of particular relevance for understanding individual processes of deliberative reasoning: (I) Opinion change in deliberation is more than directional movement, and focusing on individual patterns of changes is also important. (II) Issue awareness (knowledge and previous discussions of the issue) is likely to limit developments. (III) The social and institutional context will affect opinion developments. (IV) The effects of context and issue awareness are likely to interact in shaping opinion change and attitude consistency.

Based on the theoretical discussion above, we derive four hypotheses concerning opinion developments as a result of taking part in deliberation. The first two hypotheses are:

H1: *Participants in cross-cutting deliberation experience greater absolute opinion change than participants in like-minded deliberation and the control group.*

H2: *Participants in like-minded deliberation experience greater reductions in inconsistency than participant in cross-cutting deliberation and the control group.*

First, we expect a deliberative context characterized by cross-cutting exposure to different opinions in facilitated group discussion to generate the most opinion change (H1). This is based on the proposition that being exposed to different ideas, while being reminded to engage in a deliberative manner, will make people more likely to reflect on their views and open to change their minds. Secondly, we expect deliberation in a like-minded context to be more conducive for reducing inconsistencies among the attitudes of the deliberators. This is based on the assumption that being exposed only to similar points of view will strengthen the initial conception, since like-minded deliberation allows you to reflect on your point of view without having to deal with incongruent information.

The second set of hypotheses concern how issue awareness and context in the form of different types of deliberation interact to shape opinion change and attitude consistency:

H3: *Issue awareness has a negative effect on absolute opinion change in cross-cutting deliberation.*

H4: *Issue awareness has a negative effect on inconsistency developments in like-minded deliberation.*

Based on the discussion on motivated reasoning and the qualities of cross-cutting deliberation, we expect that opinion change is more likely when issue awareness is lower and discussions include opposing views (H3). Lower issue awareness increases the likelihood of absolute change when conflicting opinions and information are presented, while higher issue awareness is likely to result in motivated reasoning and a resistance to accepting new information. In a like-minded context, on the other hand, issue awareness is unlikely to have the same effect, as initial views are unlikely to be challenged by differing viewpoints.

The effect of issue awareness on inconsistencies in different contexts is expected to follow a slightly different mechanism (H4). According to Mansbridge (1996) and Fraser (1990), enclave deliberation can help participants formulate their reasons and strengthen their arguments. Consequently, deliberation among like-minded is likely to benefit individuals who are less knowledgeable or have not engaged with the issue previously (Karpowitz, Raphael, & Hammond, 2009). We expect that inconsistencies are especially likely to decrease among those with lower issue awareness in a like-minded context.

In the following, we explain how these hypotheses are tested in the analyses.

Data and variables

In the following, we first describe the experiment from which we obtain our data. Following this, we describe how we operationalize the key variables.

Description of the experiment

Our data come from an experimental deliberative forum on the issue of immigration, arranged in Finland 2012, to examine the impact of group composition on deliberation (Grönlund 2012, Citizen Deliberation on Immigration: Survey Data).[i] Participants were randomly assigned to either like-minded or cross-cutting discussion groups. The experiment followed a pre-test post-test design, where political opinions were measured before and after deliberation. Like in most Western countries, immigration is a current and divisive topic in Finland (Himmelroos & Leino, 2015; Jaakkola, 2009). As such, the topic is a productive area for research, since deliberation can be challenging due to participants having quite prejudiced opinions about those holding opposing views.

To recruit participants, a survey (T1) was mailed to a random sample of 12,000 adults in the Turku region in Southwest Finland. A total of 39% (n = 4,681) filled in the questionnaire that consisted of 14 questions measuring attitudes toward immigration.[ii] Based on their reported attitudes for these 14 items, the respondents were grouped into two enclaves; respondents with a negative attitude to immigration were placed into a *con* enclave, while respondents with positive attitudes to immigration were placed into a *pro* enclave. To ensure that that the participants assigned to the treatments had a

distinct view on immigration, individuals with index values close to the absolute mean of 7 (6.01-8.00 on a scale of 0 to 14) were not invited (for a more detailed description of the experiment, see Grönlund, Herne, & Setälä, 2015). The recruitment phase involved several stages; of the 805 individuals who ultimately agreed to take part, 366 were randomly selected and invited to the deliberative event. The remaining 439 people were asked to function as the control group for our study and 369 of them obliged. Those belonging to the control group were invited to complete the follow-up survey around the time of the event to minimize the influence of external events. The inclusion of a control group is imperative to distinguish genuine changes from the random noise that occur when people when unstable opinions fill in the same surveys at different times (Converse 1964; Zaller 1992). When a control group is not included it becomes virtually impossible to identify the causal mechanisms behind the changes (Karpowitz & Mendelberg, 2011; Mutz, 2006, p. 58). While this is hardly a novel assertion, making use of a proper control group is surprisingly rare in studies of opinion change in a deliberative context. In cases when control groups have been used, they have primarily been quasi-control groups based on a parallel representative sample filling out the same surveys as the participants (Grönlund, Bächtiger, & Setälä, 2014). Matching techniques (cf. Stuart 2010) have in some cases been used to improve the likeness between respondents the participants in the deliberative event and in the parallel survey (e.g. Barabas, 2004; Smets & Isernia, 2014). The benefit of our study is that those belonging to the control group also volunteered to take part, but were not allowed to attend due to random selection at the last stage were invitations were sent out. This ensures that the participants in our control group share essential traits with those who participated.

The 207 individuals who eventually took part were randomly assigned to 26 small groups, which were either like-minded groups consisting of individuals from either the con or pro enclave, or mixed groups with four participants from each enclave.[iii]

The deliberative event took place during a weekend in the spring of 2012. The participants took part in the event on either Saturday or Sunday, the procedures being the same for both days. The participants first filled in a short questionnaire (T3) measuring immigration-related and general political knowledge, after which the participants discussed in small groups for approximately three hours. In line with well-established principles of deliberative mini-publics, the discussions were designed to promote a balanced and respectful exchange of reasoned arguments. The participants received information which was designed to be unbiased and focusing on basic facts dealing with immigration in Finland, to enhance their understanding of the issue at hand. Furthermore, each group included a trained facilitator and the participants were informed of certain rules that applied to the discussion. The rules emphasized respect for other people's opinions, the importance of justifying

one's opinions and being open to the points of view of other participants. At the beginning of the group discussions, each member proposed a theme related to the immigration issue that they wanted to discuss. These themes were used as an outline for the discussions and were written on a blackboard by the facilitator. The discussions concluded with a survey (T4).

Measures

Dependent variables

Our two dependent variables are willingness to change opinion and developments in opinion consistency.

A greater willingness to change position is important, since it implies that you are reflecting on different options when encountering new information and arguments – an essential premise of the transformative function deliberation is expected to have. To reflect that the willingness to change is not necessarily uni-directional, we measure this by examining all change, regardless of the direction that the participants and control group experience from T1-T4. We therefore construct an additive index that combines the absolute change for all 14 questions (all questions coded to vary from 0-1 to weight all answers equally). This gives us a measure of how much each respondent changed their positions, regardless of whether it was consistently for or against immigration (mean 1.04; SD 0.99).[iv] By comparing the total amount of change to the control group, we also learn about the effects of deliberation compared to random changes that occur when are not engaging in a deliberative setting.

However, participants' opinions should not only change as a result of deliberation, they should also become more consistent as participants achieve a greater understanding of the issue at hand, since the deliberative process helps reduce internal conflicts among their attitudes. The measure of attitude inconsistency is based on the individual standard deviation for answers to all 14 questions. A low standard deviation implies that the individual gave a similar score to each item (all items were coded so a high score entails positive attitudes to immigration), and therefore had high consistency, whereas a high score implies that the respondent gave very different answers and therefore had high inconsistency. To measure this aspect, we calculated the standard deviation of the answers to the 14 questions (coded 0-1) at T1 and T4 for each individual. This entails that a higher score (standard deviation) designates greater inconsistency in the answers to the questions. By subtracting the T1 score from the T4 score, we obtain a measure of the developments in attitude consistency, where a higher score indicates a negative development in consistency, i.e. that the respondent grew more inconsistent as a result of taking part in deliberation (mean -0.01, SD 0.07).

The context: cross-cutting or like-minded deliberation

While absolute change does not by itself represent a greater willingness to change the experimental design allows us to evaluate how opinion change develops in different contexts. To capture differences between groups, i.e. the effects of treatments, we include a categorical variable that classifies respondents based on whether they formed part of like-minded discussions, cross-cutting discussions, or the control group. In the control group absolute changes are expected to be random. Changes in deliberative treatments, to the extent they deviate from the control group, are considered an effect of the deliberations. Depending on the nature of the deliberative environment (e.g. like-minded vs cross cutting discussions) deviations from the control group can have different theoretical implications, such as a greater willingness to change. Hence, the combination of our measures and the experimental design allows us to make assumptions regarding the deliberativeness of said changes.

Issue awareness

We use two indicators to measure issue awareness, i.e. how engaged the respondents are in immigration affairs, to see how awareness interacts with the context in shaping developments in a deliberative context. The first indicator is a measure of factual knowledge on immigration affairs (immigration knowledge). Barabas (2004) uses knowledge as a proxy for strong attitudes and Zaller (1992) argues that factual political knowledge is the best indicator of political awareness more generally, and we here follow this line of thinking by employing a similar measure for immigration issues. We measure this with an index based on 11 factual questions on different aspects of the immigration issues (M=0.45, SD=0.16). The second indicator, 'discuss immigration', captures the previous experiences with discussing immigration. This measure of issue awareness is especially important to a study on opinion change in a deliberative context because it tells us something about the respondents' previous experience of formulating arguments on the issue at hand. In a deliberative context where you are expected to present arguments in support of your opinions, such experience can be as important as the information itself. The question we use asks respondents how often they discuss immigration affairs, and answers range from 'never' to 'almost every day'.

Table 1 presents descriptive statistics on the key variables.

Table 1. Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Total opinion change	576	1.05	0.99	0.00	6.17
Inconsistency	576	-0.01	0.07	-0.35	0.30
Immigration knowledge	576	0.45	0.16	0.00	0.82
Discuss immigration	575	0.55	0.18	0.00	1.00

We examine the changes with ANOVA and regression analyses that allow us to estimate the predicted changes as a result of the central variables. We use robust standard errors to take into account the grouping of the respondents.[v] It is debated whether it is advisable to include control variables when estimating effects in experimental data (Freedman 2008; Lin 2013; Kam and Trussler 2017). Tests show that randomization ensured an equal distribution of participants according to socio-demographic characteristics, meaning these are unlikely to affect the results. We therefore follow the advice of Freedman (2008) and do not include control variables to adjust the predictions.[vi]

Empirical Analysis

Table 2 shows the differences in developments between treatments before moving on to testing our hypotheses.

Table 2. Developments in opinions and consistency

	Cross-cutting (n=88)		Like-minded (n=119)		Control (n=369)		Total (n=576)	
	Mean	**SE**	**Mean**	**SE**	**Mean**	**SE**	**Mean**	**SE**
Mean score index (0-14), T1	7.135	0.335	8.528	0.270	6.979	0.172	7.323	0.136
Mean score index (0-14), T4	8.000	0.274	8.951	0.260	6.995	0.157	7.553	0.126
Mean change, T1-T4	0.866***	0.171	0.423***	0.111	0.017^{NS}	0.072	0.230***	0.059
Mean absolute opinion change, T1-T4	1.431***	0.119	0.948***	0.078	0.991***	0.051	1.049***	0.041
Inconsistency, T1	0.207	0.008	0.198	0.006	0.203	0.004	0.203	0.003
Inconsistency, T4	0.204	0.007	0.195	0.006	0.197	0.004	0.198	0.003
Inconsistency change, T1-T4	-0.004^{NS}	0.006	-0.002^{NS}	0.006	-0.006*	0.004	-0.005*	0.003

Note: Developments tested with t-test to see whether significantly different from 0. P: ***<0.001, *<0.05, ^{NS} Not significant

The differences in opinion mean scores at T1 and T4 are pronounced. The mean changes, which consider the direction of the developments (thereby capturing whether respondents became more pro or con immigration), reveal that the developments on average are significantly larger than zero in both the cross-cutting (mean development=0.87, $p<0.001$) and the like-minded group (mean development=0.42, $p<0.001$), whereas the developments in the control group are, on average, not significantly different from zero.[vii]

However, what is more important for the current purposes is the absolute opinion change, which captures the extent to which the respondents experience changes in their original stances, regardless of the direction of these developments. As might be expected, these scores have a larger magnitude than the mean changes under all circumstances. It is noteworthy that even the control group experiences changes significantly larger than zero (average change=0.99, $p<0.001$). This shows that answering the same questionnaire repeatedly can give slightly different outcomes even without any intentional treatment, which is in line with the arguments of Converse (1964).

The changes are less pronounced for opinion inconsistency, but nonetheless noteworthy. This is because the results show no significant developments within either group of deliberative participants, whereas the control group experienced a significant negative change on average (-0.006, $p<0.05$). While the effect is rather weak, it suggests that simply filling in the surveys helps people to achieve a greater consistency in their opinions – i.e. the variation in the responses decreases. According to Tesser (1978) already actively thinking on an issue can induce opinion change as participants reinterpret or discount inconsistent beliefs. In other words, people get "better" at filling in the questions in a consistent manner even without deliberation. It would therefore appear that much of the observed variation in previous studies may be attributable to random changes rather than manifest effects. This clearly shows the importance of including a control group when examining issues such as these.

The first two hypotheses concern the differences in developments between treatments. To discern the differences among the three groups, we use One-way ANOVA analyses with pairwise comparisons to discern where any potential differences occur. The results are reported in Table 3.

Table 3. ANOVA analyses examining differences in developments among like-minded, cross-cutting and control groups

	Absolute opinion change T1-T4		**Consistency change T1-T4**	
	Differences	**FH-test**	**Differences**	**FH-test**
Control group vs. Like-minded	0.0422	0.5806	0.0038	0.7525
Control group vs. Cross-cutting	0.4407	5.3842*	0.0024	0.4192
Like-minded vs. Cross-cutting	0.4830	4.9785*	0.0014	0.2106
ANOVA	F(2, 573) = 8.05, p = 0.0004		F(2, 573) = 0.16, p=0.8532	
Welch ANOVA	Wstat(2, 190.7)=6.476, p=0.0019		Wstat(2, 206.76)=0.164, p=0.8487	

Note: Entries show results of ANOVA analyses with Fisher-Hayter pairwise comparisons. * Significance $p<0.05$

For absolute opinion change, the ANOVA test shows that there are significant differences in the developments in the three groups. The pairwise comparisons show that developments in the cross-cutting deliberation group differ from both the control group and the like-minded group, which suggests that this type of deliberation induces a greater willingness to change opinions beyond what can be put down to random fluctuations in answers to survey questions as observed by Converse (1964). There are, however, no significant differences between the control group and those taking part in like-minded groups, meaning it is only within cross-cutting deliberation that participants experience substantial opinion change. Hence, in accordance with H1, the treatment did cause opinion changes within cross-cutting deliberation.

The results for H2 and consistency changes are less encouraging, since there are no significant differences whatsoever. This entails that even if the developments in the control group were significantly different from zero, we cannot establish that the differences in developments between the control group and either of the two kinds of deliberation are significant. As such, there is nothing to suggest that deliberation in either form reduces inconsistencies in attitudes.

To examine the final two hypotheses H3 and H4, we in Table 4 report regression models examining the effects of issue awareness and the interaction effects between treatments and the two predispositions. For each of the dependent variables, two models are presented; the first assessing the direct effect of issue awareness across all respondents while the second model includes interaction effects to assess differences in effects between treatments.[viii]

Table 4. Effects of issue awareness and moderating effects of treatment

	Total opinion change T1-T4				**Consistency change T1-T4**			
	B	**SE**	**B**	**SE**	**B**	**SE**	**B**	**SE**
Treatment (ref: Control group)								
Like-minded	-0.008	0.094^{ns}	-0.251	0.440^{ns}	0.005	0.007^{ns}	0.058	0.036^{ns}
Cross-cutting	0.425	0.128**	-0.099	0.519^{ns}	0.003	0.007^{ns}	0.041	0.031^{ns}
Issue awareness								
Discuss immigration	0.195	0.242^{NS}	-0.074	0.318^{ns}	0.027	0.018^{ns}	0.034	0.025^{ns}
Immigration knowledge	-1.016	0.265***	-0.993	0.313**	-0.007	0.019^{ns}	0.016	0.023^{ns}
Treatment#discuss immigration (ref. Control group)								
Like-minded			0.207	0.497^{ns}			-0.008	0.041^{ns}
Cross-cutting			1.244	0.622*			-0.030	0.043^{ns}
Treatment#Immigration knowledge (ref. Control group)								
Like-minded			0.262	0.737^{ns}			-0.105	0.055†
Cross-cutting			-0.363	0.847^{ns}			-0.050	0.047^{ns}
Constant	1.332	0.191***	1.475	0.232***	-0.018	0.015^{ns}	-0.032	0.019†
N	575		575		575		575	
R^2	0.05		0.06		0.01		0.02	
BIC	-2029.81		-1996.83		-5077.74		-5038.53	

Note: Entries are coefficients (B) with robust standard errors (SE) from linear regression analyses (OLS). Significance: *** p<0.001; ** p<0.01; * p<0.05; † < 0.10, ns Not Significant.

There are some indications that the effect of issue awareness differs depending on treatment in line with H3 and H4. For absolute opinion change, there is a significant interaction effect for discuss immigration and cross-cutting deliberation (B=1.244, p<0.05), which shows that the impact of prior experiences with discussing immigration differs in this form of deliberation compared to the control group, as suggested by H3. For consistency, the coefficient for the interaction term for knowledge and like-minded deliberation is barely above the conventional threshold of 0.05 (B=-0.105, p=0.055).

However, conventional tests are unreliable when it comes to interaction effects (Brambor, Clark, & Golder, 2006) and the effect becomes significant when including the interaction terms in separate models. For this reason, we explore the substantive implications of the interaction effects in the following by plotting the developments in the predicted values depending on issue awareness in the like-minded, cross-cutting and control group.

Figure 1. Effect of discuss immigration in control group, like-minded and cross-cutting discussions on total opinion change

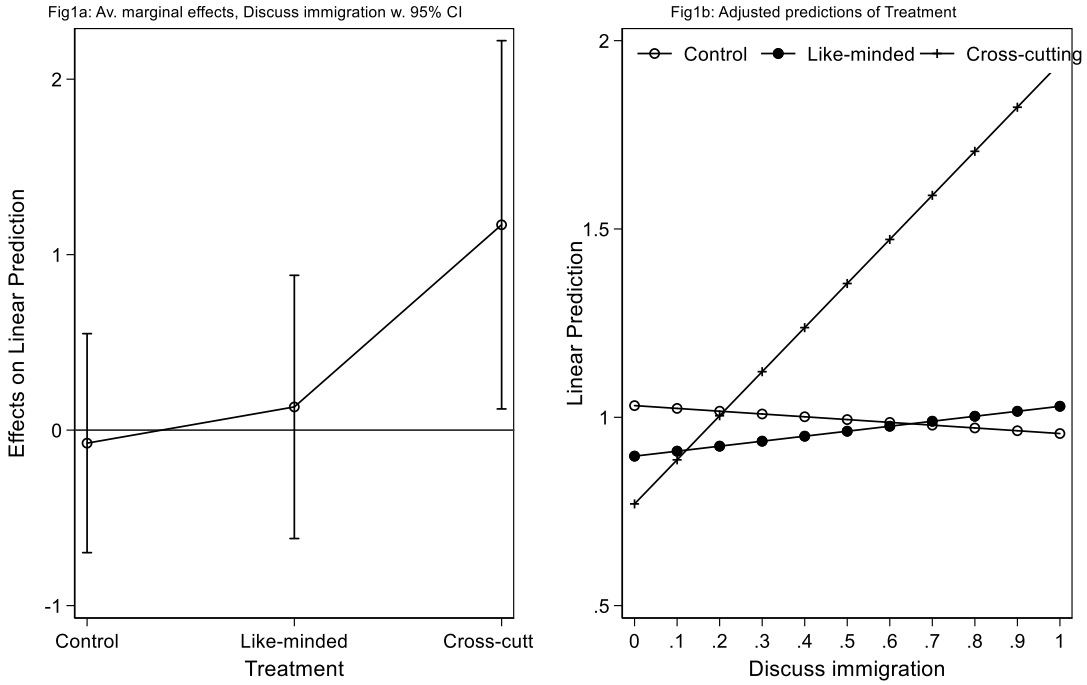
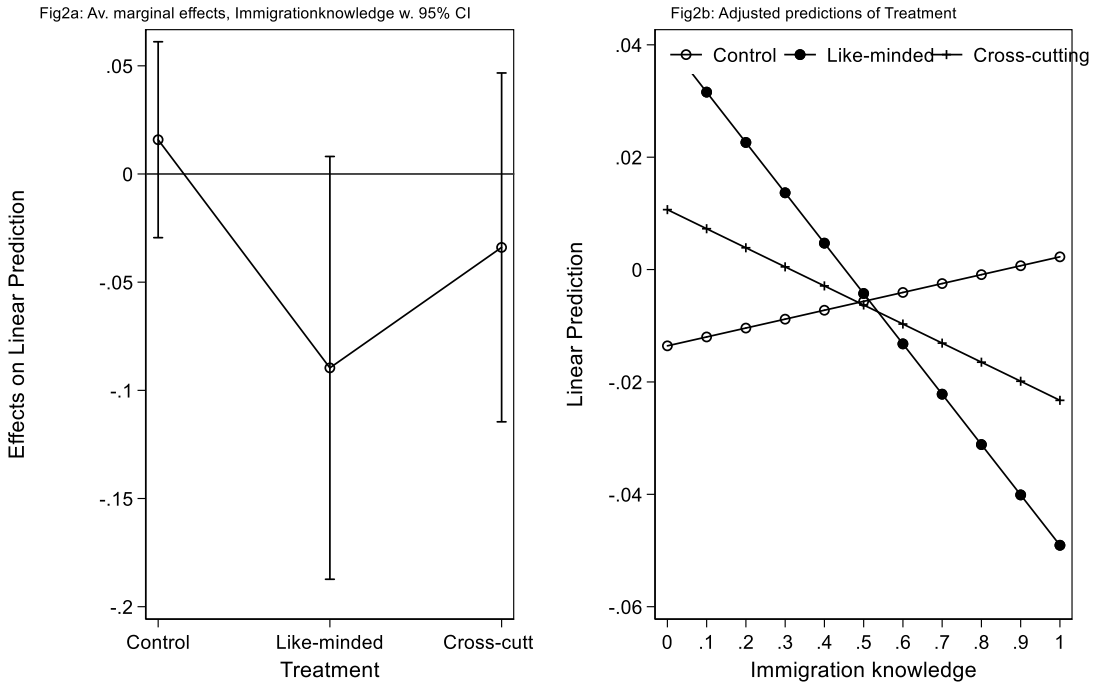


Figure 1 shows two plots concerning the effect of discussing immigration on absolute opinion change in the three groups. Fig. 1a shows that the non-significant effect of discussing immigration in the first model is partly misleading, since there is a positive effect of having discussed immigration previously on absolute opinion changes. This entails, as Fig. 1b clearly demonstrates, that people in cross-cutting discussions are more likely to experience opinion changes when they have discussed previously. This shows that deliberation in cross-cutting groups may counteract some of the potential adverse effects of motivated reasoning since people are more likely to change positions when they have previous experiences of discussing the issues. We may conjecture that their prior experience involves discussing mainly with like-minded people, and that they become more willing to change their views when exposed to other opinions and arguments.

Fig 2 shows two plots for the three groups for the effect of knowledge on inconsistency.

Figure 2. Effect of immigration knowledge in control group, like-minded and cross-cutting discussions on attitude consistency.



Although the differences here are less pronounced, as already indicated by the test of significance, the implications are nonetheless equally remarkable. The effect in the control group is weakly positive (but non-significant). However, in the two deliberative settings it is clearly negative, even if the high standard errors entail that the effects are non-significant at the .05 cut-off threshold. This suggests that people with high knowledge may become more consistent through taking part in deliberation, particularly within like-minded deliberation. Hence, this mechanism may serve to support motivated reasoning, since those with initial high awareness become even more convinced about their initial position.

Discussion of the results

In line with the first hypothesis (H1) our results show that only cross-cutting deliberation induces a willingness to adapt opinions greater than the control group. While all three groups on average exhibit absolute opinion changes, the changes in the group with cross-cutting deliberation were significantly greater compared to both the control group and those involved in like-minded deliberation. Hence,

there is a causal effect from cross-cutting deliberation that leads participants to become more open to revising their original positions, which does not occur in like-minded deliberations, where changes are on a par with the control group and therefore most likely random noise rather than genuine opinion change. The fact that willingness to change is significantly stronger for the treatment with the most deliberative character can be seen as an indication that this treatment induces more reflection upon different alternatives. The result not only shows the importance of considering non-uniform individual level changes (Gastil et al., 2008, Knight & Johnson, 2011), it also highlights that it is imperative to include a control group to verify whether observed developments are due to genuine causal effects rather than random noise.

We find no evidence that either of the deliberative treatments reduce attitudinal inconsistencies, and thereby no support for the second hypothesis (H2). However, this also shows that the greater opinion change for participants in cross-cutting deliberation is not a result of increased ambivalence. Hence, they do not become more inconsistent as opinions change, but rather settle on a new belief that is about as consistent as their previous one. On one hand, this is good news from a deliberative perspective since it suggests that people gain an updated attitudinal alignment after deliberating with others who do not share their point of view. On the other hand, the result is not in line with previous studies suggesting that deliberation reduces ambivalence (Farrar et al. 2010, List et al. 2013) and the more general expectation that engaging in deliberations should reduce inconsistencies by highlighting ambiguities or deficiencies (Benhabib, 1996; Knight & Johnson, 2011). As such, the indications of deliberative reasoning in our analysis of attitude consistency are relatively weak.

In line with Barabas (2004), our study shows that knowledge in general is linked with lower levels of opinion change. However, when examining the effect of issue awareness in different contexts in connection to H3 and H4, it became clear that participants with prior experience with discussions on the issues in fact were more likely to change opinions when engaged in cross-cutting deliberation. When taking part in like-minded deliberation, on the other hand, our results indicated that prior knowledge was associated with developments towards fewer inconsistencies. Although the results here came with some uncertainties, this is again testimony to the importance of recognizing the different implications of different types of deliberation. All in all, there seems to be both some support for issue awareness reducing the potential of deliberative reasoning and an indication that cross-cutting deliberation being able to counter the impact of motivated reasoning.

While opinion change in deliberation has been an active area of research for years, much remains unknown. While our study delivered some promising findings with regard to the willingness to change in diverse opinion groups, improvements in coherence is only found for knowledgeable participants

in like-minded groups, which is more in line with motivated reasoning than deliberative reasoning. Hence the potential for deliberative reasoning remains somewhat ambiguous.

Finally, we want to point out some limitations of the study. The external validity is hard to assess for this kind of deliberative experiments. On the one hand we had the possibility to compare our findings to a control group without deliberation, but on the other hand it is impossible to completely avoid issues related to self-selection when people are free to choose whether they will take part or not. Furthermore, it is uncertain whether the observed effects persist after the conclusion of the experiment. Nevertheless, the results suggest that cross-cutting deliberation can open up minds to different perspectives, but is unlikely to profoundly change the way people are thinking.

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[i] For access to data, see: https://services.fsd.uta.fi/catalogue/FSD2958?lang=en&study_language=

[ii] An exploratory factor analysis of the 4681 respondents indicated that the fourteen items formed a single dimension measuring attitudes for or against immigration. Although the data material we use here excludes respondents with intermediate values, we corroborated this uni-dimensionality with both Mokkan scale analysis and confirmatory factor analysis at both T1 and T4. Although the Mokkan scale analysis suggested that some items could be left out, the correlations between the indexes with and without these items were extremely high at both T1 and T4 (about 0.99), meaning the inclusion is unlikely to affect the substantive results. We therefore proceed with considering migration attitudes as a one-dimensional phenomenon since the basic outline of the experiment is based on this premise.

[iii] See Karjalainen & Rapeli (2015) for an analysis of the attrition in connection to this experiment.

[iv] The hypothetical maximum value of this index is 14, but this is unlikely to be observed since it entails that a respondent on each question moved from one extreme to the other, which is highly unlikely.

[v] We refrain from using multilevel modelling since the control group is one large group including 369 of the 576 respondents, meaning it would not be possible to estimate the group effect adequately. This is also warranted empirically since empty models suggest that a small share of the variance is at the group level (ICC=0.02). The robust standard errors correct biases from heteroscedasticity and therefore alleviates the problem.

[vi] We fitted a number of models that includes age gender and education as control variables, but these show substantially similar results.

[vii] A closer look at the mean scores shows that the like-minded treatment has a higher mean than the cross-cutting treatment and the control group. This is not due to a major flaw in the randomization process, but rather a consequence of more con-immigration respondents abstaining in the final stage of the experiment, which means that this treatment ended up with a couple of more pro like-minded groups than con like-minded groups. The cross-cutting treatment and the control group, where no such imbalances exist, have similar means.

[viii] We also tried to include the interaction effects in separate models and mean-centering variables, but since the effects were substantially similar, we do not report these models in the tables.