

Deliberation, Political Knowledge, and Vote Choice: Results from an Experiment with Second-order Elections

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Abstract

This article assesses the effects of deliberation and increased political knowledge on vote choice. The observed knowledge gains result from participation in a deliberative experiment in the context of second-order elections. They facilitate realistic estimates of information gains that can be expected if citizens were politically more engaged than they actually are. Using survey data on 333 participants in the deliberative experiment and 729 respondents from a control group, we find that deliberation is associated with significant changes in vote choice. Specifically, participating in the deliberative event is related to an increased likelihood of vote switching in favour of Green parties. However, there is no support for the expectation that changes in citizens' party choices are related to the observed increases in political knowledge.

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An informed citizenry is often held to be a prerequisite for a healthy democracy: Informed citizens are better able to assess their interests as individuals and as members of groups (Dahl, 1989: 111-112; Delli Carpini and Keeter, 1996). The more knowledgeable citizens are, the better they will be able to relate issues of public policy to their own interests (Downs, 1957; Enelow and Hinich, 1984) and to assess the performance of governments (Key, 1966; Fiorina, 1981; Manin et. al., 1999)¹ However, overall levels of information, knowledge and comprehension of politics are relatively poor; moreover, they are unevenly distributed across the citizenry (Converse, 1964; Delli Carpini and Keeter, 1996). The important role of political knowledge combined with low levels and unequal distribution among citizens raises questions about the political consequences of differential knowledge levels among voters. Do the voting decisions of highly informed citizens follow a significantly different logic than that followed by voters who are ill informed? And would the outcome of an election be different if only the political knowledge of citizens would have been higher?

Three prominent streams of electoral research have dealt with these questions. A first stream argues that voters do not require much substantial information on the issues at stake in order to arrive at fairly reasonable political judgements (Popkin, 1991; Sniderman et al., 1991; Lupia and McCubbins, 1998). As Sniderman et al. (1991: 19) put it, ‘people can be knowledgeable in their reasoning about political choices without possessing a large body of knowledge about politics.’ A second stream of research holds that, while people’s individual choices might be erroneous, their aggregate decisions are likely to be as good as fully informed decisions. Analogous to the ‘miracle of aggregation’ in Condorcet’s jury theorem, aggregate political choices are claimed to be reasonable because flawed individual judgements and choices are randomly distributed and cancel each other out (Converse, 1990; Page and Shapiro, 1992; Austen-Smith and Banks, 1996).

A third stream views high levels of political information to be valuable and is interested in ways to improve the knowledge base of individual political choices. This is the large and growing body of research into deliberative democracy. Most accounts of deliberative democracy contain a more or less explicit epistemic dimension (cf. Estlund, 1997). Deliberation is expected to increase citizens’ information levels, which may in turn prompt a re-evaluation of

existing political preferences. As Mutz (2008: 523) summarizes, better-informed, more enlightened opinions ‘are consensually valued by theorists and empiricists alike.’ Thus, political knowledge emerges as a crucial link between deliberative and representative democracy. In this perspective, the questions about the electoral consequences of political knowledge raised above can be recast to incorporate the role of deliberation: What are the informational consequences of deliberative democracy for citizens’ behaviour in their roles as voters? Do deliberators take different voting decisions than people who do not take part in deliberation? And if vote choices between deliberators and others are indeed different, is this a consequence of the increases in information and knowledge that follow from deliberation?

These questions are particularly relevant in the context of the EU wide elections of the members of the European Parliament (EP). These elections have been described as second-order national elections, in which national rather than European issues and policy matters shape vote choices (Marsh and Mikhaylov, 2010). The second-order nature of EP elections is part and parcel of the EU’s legitimacy problem, in particular of its perceived democratic deficit (Follesdal and Hix, 2006; Hix, 2008). To address these issues, the European Commission has recently taken a keen interest in deliberative democracy. Concerned with the legitimacy of the European level of governance, it has started to promote experiments involving deliberative polling. Within this framework, deliberative polling arrangements such as EuroPolis provide citizens with an opportunity to learn about important public policy issues and the competing positions and proposed solutions to pressing problems as they are discussed by political elites in EU institutions such as the EP. The practical question is whether deliberative polling is a suitable instrument for alleviating some of the negative side effects of the second-order character of EP elections, in particular the prevalent low information levels. The latter aspect also means that EP elections provide a suitable testing ground for scholarly expectations about the information effects of deliberation. To address this question we have to, firstly, gauge the extent to which participation in deliberation events increases political knowledge and, secondly, whether any increase in political knowledge would actually prompt individual voters to adjust their voting decisions.

In the following section we discuss the relationship between deliberation, political knowledge and party choice and develop hypotheses about the effects of deliberation on political knowledge, and of political knowledge on vote choice. We then describe our analytical strategy and measurement of the main variables before presenting our findings and robustness checks. We

conclude by discussing the implications of our findings for research on the relationship between political information and party choice, and for the potential of deliberative democracy to make a difference in electoral politics.

Political knowledge and electoral support for Green parties

How does citizens' political knowledge affect their voting decisions? In the early years of empirical research into electoral behaviour, knowledge did not play a big role. Citizens' voting decisions were conceptualised to rest on stable and durable political predispositions such as membership in social classes and religious groups (Lipset and Rokkan, 1964) and party identification (Campbell et al., 1960; 1966). Only recently, when a process of de-alignment has weakened both the prevalence and effectiveness of these predispositions (Dalton et al., 1986; Franklin et al., 1992), has the link between political knowledge and vote choices become a more prominent field of study. This link is now often conceptualized as the extent to which citizens' vote 'correctly', where a 'correct' vote is defined as a vote choice in accordance with an individual's own issue priorities and values. In other words, a 'correct' vote decision is one 'that is the same as the choice which would have been made under conditions of full information' (Lau and Redlawsk, 1997: 586).

If most people vote correctly most of the time and if the minority of people voting incorrectly is distributed randomly with respect to vote choice, a fully informed citizenry is not needed for democratic procedures to lead to informed collective decisions (Page and Shapiro, 1992). However, the required randomness cannot be taken for granted, and there is evidence that individual knowledge differentials are not neutral with respect to aggregate party choice (Bartels, 1996). This implies that a general increase in relevant political knowledge among all voters could benefit some parties and harm others.

However, political knowledge on the part of some voters may be inconsequential to the extent that political competition produces information shortcuts and heuristics that empower the less knowledgeable voters to such an extent that they vote *as if* they were fully informed. As a result, additional knowledge may have little or no effect on voting behaviour (see again Lupia, 1994; Lupia and McCubbins, 1998; Popkin, 1991). Such information shortcuts and heuristics include ideology (Alt, 1994), as well as the role of opinion leaders in interpersonal communication (Huckfeldt and Sprague, 1995). In a similar vein, retrospective assessments of

government performance and cues from public opinion polls can enable poorly informed voters to emulate fully informed behaviour (McKelvey and Ordeshook, 1986, 1990).

For these mechanisms to work, the task faced by voters has to be relatively straightforward. This is typically the case in two-party systems or, more generally, when the number of relevant parties is small. For that reason, quasi-informed voting tends to be more difficult outside the US and (until recently) the UK. It is particularly unlikely in the context of elections to the EP, where list PR electoral systems are used and multiparty competition is the norm. Furthermore, due to their second-order nature, EP election campaigns do not provide the same powerful information shortcuts as first-order election campaigns usually do. One reason is that there is less at stake in second-order elections. As a consequence, electoral campaigns tend to be lukewarm and often focus on issues – like the performance of national governments – that have little to do with EU politics and the jurisdiction of the EU institutions. Furthermore, fewer citizens participate, and among those who do participate, vote switching is more frequent than it is in first-order elections (Marsh & Mikhaylov 2010; Schmitt et al. 2012). Therefore, EP elections provide a setting in which information gains have a better chance to affect vote choice than in other contexts.

For real world democracies, full information on the part of citizens is an unattainable standard and in this paper we do not investigate full information or whether this would lead to ‘correct voting’ as defined by Lau and Redlawsk (1997). But whatever the reasoning, at some point voters at EP elections form a vote intention, and most will act on this intention on election day. The question for advocates of deliberative institutions is whether an initially formed vote intention can be revised as a result of deliberating about relevant policy issues. In particular, can deliberative procedures contribute to a transformation of party preferences by making these preferences more considered, enlightened, reflected or well-founded? Political knowledge acquires an important role in this regard. The chances for increased political knowledge to change standing voting intentions should be easier in second order elections because there is less at stake in these elections, and vote switching must therefore be considered to be less consequential. This implies that the Project X experiment constitutes an easy test case for the capacity of knowledge increases to affect voting intentions. If it does not work here, one should not expect it to work in the context of first-order elections.

In the following we investigate whether knowledge increase about environmental issues such as climate change will boost the Green vote. We focus on Green parties because no other party group puts more emphasis on these issues and is stricter about them (Belanger and Meguid, 2008; Spoon et al., 2012). The Green party ‘owns’ the environment issue more credibly than other parties (cf. Budge and Farlie, 1983; Petrocik, 1996; Spoon et al., 2012) in the sense that no other party can convincingly compete with them in areas like protection of the environment and opposition toward nuclear energy. And regarding our deliberative experiment, no other party can claim as credibly as the Greens to be strict on issues such as climate change. However, for increases in issue knowledge to affect vote choice, deliberation must be capable of producing such knowledge increase in the first place. There is evidence for an increase in participants’ knowledge and sophistication during deliberative experiences (Barabas, 2004; Gastil and Dillard, 1999; Luskin et al., 2002). These knowledge gains may result from the actual deliberation itself, from the reading of preparatory materials, or from some interaction between these activities (Muhlberger and Weber, 2006). As Thompson (2008) points out, however, it often remains unclear what particular kind of knowledge should be affected by deliberation. In this regard, previous research has concentrated on the effect of increases in generic political knowledge about institutions and politicians. However, this may only have a tenuous bearing (if any at all) on the voting decisions of citizens. By contrast, we are interested in the effects of issue specific information gains. Therefore, our first hypothesis concerns the relationship between participation in the deliberative experiment and knowledge change with respect to environmental politics:

H1: Participants of the deliberative event display an increase in knowledge about climate politics after the event.

Secondly, we posit a relationship between knowledge increases in the area of environmental politics and the likelihood to change one’s vote intention from any party to the Green party. This means that, if deliberation leads to increases in political knowledge about climate change, the likelihood of voting Green can be expected to increase as a result of it. Therefore, we expect switches from a non-Green pre-deliberation vote intention to a Green post-deliberation vote to be related to knowledge increases regarding the political aspects of climate change:

H2: Increases in knowledge about climate politics are associated with an increased likelihood of switching to the Green party, *ceteris paribus*.

Knowledge gains are expected by many to increase the likelihood of voting correctly (cf. Lau and Redlawsk, 1997). Political knowledge, in this perspective, must be considered to be a co-determinant or intervening variable in any explanation of vote choice as it must be expected to strengthen the association between issue attitudes and policy preferences on one side and party choice on the other (Bartels, 1996). Informed citizens vote differently because, given their policy preferences, they can better recognize the right vote choice and act accordingly. Therefore, increased knowledge should particularly affect the vote choices of citizens favouring a policy stance associated with the Green party:

H3: The positive association between increases in knowledge about climate politics and the likelihood of switching to the Green party is greater the more a participant supports policies combating climate change.

Research design and measurement

Previous studies have assessed the effect of political knowledge in the context of US elections (Bartels, 1996; Althaus, 1998), in single European countries (Oscarsson, 2007 for Sweden; Hansen, 2009 for Denmark), and in a broader comparative perspective (Tóka, 2004). The single-country studies compare actual (self-reported) voters to a counterfactual of fully informed voters (Bartels, 1996; Althaus, 1998; Oscarsson, 2007; Hansen, 2009), while Tóka (2004) applies information levels that are less than full but nonetheless arbitrary. The problem with these operationalizations is that the counterfactual information levels are either unrealistic or artificial, reflecting the fact that researchers do not know how much knowledge increase can be realistically expected.

In the present analysis we utilize the level of political knowledge that is generated by the live experiment for the deliberative poll of Project X conducted in the context of the June 2009 EP elections. Specifically, we estimate the effect on vote choices of increases in political information as experienced by citizens who participated in the Project X event. To this end, we use the data from survey waves 1 and 4 of the deliberative poll.² Two stratified random samples have been drawn from the same population. The first sample was aimed at recruiting participants in the polling event (initial N=3,000) and the other at recruiting members of the

control group (initial N=1,300). These samples were based on national quotas in all EU member states. Before the experiment (t1), both groups were surveyed using the same core questionnaire. Of the initial treatment group sample, a random subset (N=600) was invited to participate in the deliberative polling event. Of these respondents, 348 attended the event and 333 were eventually surveyed again at time t4. The members of the control group were also surveyed again at t4; 729 control group respondents answered both the t1 and t4 polls. Further details on the sampling strategy and the deliberative experiment are provided by Isernia and Fishkin (2014).

The EuroPolis poll focused on the need for policymakers to confront the issue of climate change as one of two salient issues according to recent Eurobarometer evidence (the other issue was immigration from outside the European Union). The climate change issue was intensely discussed throughout the deliberative sessions, and participants had been sent material to prepare in advance of the meetings. In the first wave (t1), respondents were asked about their vote intention.³ In the final wave, after the EP election (t4), respondents were then asked which party they voted for. The dependent variable (*Green switcher*) is a binary variable coded 1 if a respondent changed their original vote intention from a non-Green to a Green party, 0 otherwise.

One might question the validity of the vote recall, and there is indeed a rich literature on the conditions under which, and the reasons why, misreporting of the voting decision can affect survey responses (e.g. van der Eijk and Niemöller, 1979; Traugott, 2008; Traugott and Katosh, 1979; Waldahl and Aardal, 1982, 2000). We assume that these concerns are less pertinent to the current study, for two reasons. Firstly, we analyze panel data and compare vote intentions (t1) and the actual vote (t4) expressed at distant points in time. Recall distortions due to the fading of memory should not constitute much of a problem here. The second reason has to do with the character of EP elections. Other than in (first-order) national elections, the validity of the vote recall is significantly less threatened by a winner-takes-all type of bandwagon effect. The simple reason behind this is that it is not easy to distinguish winners from losers in EP elections. The overall composition of the EP does not become very visible for the public at large, not least because no government or government coalition (in the traditional sense of the term) is formed after the election which would depend on the relative strengths of the groups in parliament.

Our measurement of *knowledge change* follows established practice but adapts this to political issues pertinent to Green party choice. Six political knowledge questions were presented to deliberators as well as to the respondents of the control group at t1 and t4. The items cover both specific knowledge about the two issues discussed in the deliberative event – immigration and climate change – and more general knowledge of the institutions of the European Union. As expectations about the effect of knowledge change on vote decisions hinge on Green parties’ ownership of environmental issues, we restrict the calculation of knowledge scores to the two questions relating to climate change. The first question asks respondents about the approximate percentage of the EU’s total energy consumption that comes from fossil fuels (coal, gas or oil). Possible answers were 50, 60, 70 and 80 per cent and ‘‘couldn’t say’’ (the correct answer is 80 per cent). The second question asked which ‘country’ (China, the European Union, the United States, and India) produces the most greenhouse gases (the correct answer is China). Correct answers are added up to knowledge scores [0, 1, or 2]. Knowledge change is the difference between these scores at t1 and t4.⁴

Respondents’ attitude on climate change is defined as their readiness to support political means of tackling climate change even if doing so may harm the economy.⁵ Deliberation over climate change is likely to affect the views of the treatment group members in this regard (Sanders, 2012: 6). The attitude has therefore been measured at t4, which means that our estimates of the effect of knowledge gains or its interaction with attitude are net of that any changes in respondents’ attitudes on climate change brought about by the experiment.

To be able to attribute vote switches in favour of Green parties to knowledge increases, we control for a number of other factors that are known to influence voting decisions. These include the ideological distance (on the left-right scale) between each respondent and the Green party in her or his home country, respondents’ attitudes concerning climate change, and their general propensity to switch to a Green vote. In addition, we control for long-term political predispositions originating in the social background of respondents (age, gender, class, education, and religion), as well as country level factors that might influence voting behaviour.

Political control variables

The likelihood of switching to the Greens will be affected by the distances in political views and general ideological positions between the respondent and the Green party. The smaller this ideological distance is, the easier a prospective voter should find it to switch allegiances

from a non-Green to a Green party. To measure this *distance to Green party* we calculated the differences between the self-placements of respondents on the ten-point left-right scale as reported in the EuroPolis survey at t4 and the commensurate placement scores for the Green party in these respondents' country. These party scores are estimated by the averages of respondents' placements of their country's Green party on the left-right dimension as identified in the 2009 European Election Study (van Egmond et al., 2010).

Existing research on vote switching is either concerned with changes in vote choice between successive elections of the same type (Schoen, 2000) or between different types of elections (Carrubba and Timpone, 2005; Schmitt et al., 2012). By contrast, we are interested in switches between a pre-deliberation vote *intention* in the run-up to an EP election and a post-deliberation *reported* vote at the same election. Therefore, we should also control for the strength or stability of the vote intention. Our data allow us to measure this indirectly by calculating the individual *propensity to switch* to a Green vote (the closest available instrument to classical measures of partisanship or party identification). This is measured by the difference, before deliberation, between the propensity to vote for a Green party and the propensity to vote for the most preferred party (i.e. the highest propensity to vote) whichever party that may be.⁶ The difference ranges from minus 10 to zero. The closer it is to zero, the easier it is for an individual to abandon an original non-Green vote intention. Data for this variable are only available for members of the treatment group.

Social-background variables

The relatively small number of party switchers constrains the number of predictor variables we can include in the model. Logit estimates may no longer be unbiased and efficient if the data contain less than 10 events per predictors (Peduzzi et al., 1996). To be able nonetheless to control for the socio-demographic predictors of vote choices, we construct an instrumental variable and include this on the right hand side of our switching model. The instrument is the predicted probability of switching to the Green party based on a logit model of age, gender, class, education and religiosity. The coding of these variables follows standard practice.⁷ To avoid artificially large odds ratios due to many near zero values of this variable, the natural log of the resulting predictions will be used in the analysis below. Estimates of the model used for predicting the instrument are reported in Table A-1 in the Appendix.

Country-level variables

At the level of member states, we control for the strength of Green party (vote share at the most recent first-order election), the position of the EP election within the national electoral cycle (absolute temporal distance to the midterm point between the two adjacent first-order elections) and economic performance in 2009 (GDP per capita in purchasing power standards, taken from Eurostat).

There is some loss of data due to missing observations on several variables. No information is available on the ideological distance to the Green party for 263 respondents (25%) across both treatment and control group respondents from Denmark, Bulgaria, Hungary, Lithuania, Romania and Slovakia.⁸ Another variable with noteworthy missingness is social class, where 64 respondents (6% of the pool) were unable or unwilling to identify themselves with any of the class labels and had to be coded as missing. Summary statistics of all variables are reported in the Table A-2.

Results

Within the treatment group, 5.2 per cent of respondents stated at t1 that they would vote for a Green party at the forthcoming EP election. In the post-election survey (t4), 13.8 per cent of respondents in that group claimed that they voted for a Green party. 35 treatment group respondents (10.1 per cent) changed their original vote intention from a non-Green to a Green party (*Green switchers*). Thus, the vote share of Green parties more than doubled between the pre and the post election surveys. By comparison, in the control group the percentage of prospective Green party voters at t1 was 3.6 per cent while at t4 4.7 per cent of control group respondents said that they voted for a Green party. Here, only 2.8 per cent of respondents switched from a non-Green pre-election vote intention to a reported Green party vote.

To address Hypothesis 1 we conduct a difference-in-differences means comparison. Before partaking in the deliberation event (t1), respondents in the treatment group correctly answered an average of 0.69 out of two questions (Table 1). After the deliberation experience (t4), this value rose to a full correct answer. This increase in knowledge is by no means trivial, and it is statistically highly significant. By contrast, within the control group knowledge levels remained unchanged from the beginning to the end of the study. Thus, Hypothesis 1 can be upheld.⁹ We also note slightly different knowledge scores at t1 in the treatment group (0.69 correct answers) and the control group (0.6 correct answers). This difference is statistically not significant, suggesting that any differences between the treatment group and the control

groups are small and unlikely to affect our estimates of the relationship between knowledge and party choice. However, to rule out any influence of these small differences the analysis below is augmented by a treatment effects estimator with inverse-probability-weighted regression-adjustment.

[Table 1 about here]

Our second expectation is that increases in knowledge about environmental issues make it more likely that a voter will switch to the Green party, *ceteris paribus* (Hypothesis 2). To test this expectation, we regress vote switching to Green parties on knowledge increases as well as on attitudinal and demographic control variables (Table 2). As we are not primarily interested in the effect of the actual treatment – participation in the deliberation event we estimate logit models separately for the treatment and the control group (columns 2-6). To assess whether our estimates are in some way influenced by non-random assignment of respondents to treatment and control groups and the possible dependence of treatment assignment and knowledge we also use a treatment effects estimator with inverse-probability-weighted regression-adjustment (column 7). The weights are calculated on the basis of respondents interest in politics in addition to all covariates in the models reported in Table 2. We find two significant effects on switching to Green among both groups. Firstly, respondents’ ideological distance to the Green party affects the likelihood to switch negatively (as it is expected to). The cell entries in Table 2 are odds ratios, indicating that a one-unit increase in ideological distance to the Green party reduces the expected likelihood of switching to this party by approximately one third. Secondly, respondents’ support for climate action has a positive association with their likelihood to switch to the Green party. Both effects are larger for the treatment group (column 2) than for the control group (column 3). However, contrary to Hypothesis 2, knowledge change is not related to party switching.

[Table 2 about here]

Our third hypothesis states that party switching is related to the interaction between knowledge change and the attitude on climate action of the respondent. The effect on vote switching of the interaction between knowledge change and climate change attitudes is not significant, so that Hypothesis 3 is also falsified. These findings are confirmed by similar models that also include the propensity to switch to the Greens as measured ahead of the experiment (column

4) and our synthetic measure of socio-economic background effects on vote choices (columns 5 and 6). The negative results are robust to these additions. Merely the effect of attitude on climate change is not significant in the control group once of socio-economic background is included in the model. Finally, we estimate treatment effects with the aid of inverse-probability-weighted regression adjustment on the pooled data (column 7). The treatment is a significant predictor of vote switches toward the Greens: participating in the deliberative event increases the likelihood of switching to Green parties by 8 percent, *ceteris paribus*. Estimates of the effects of all other covariates are robust to this change in model and estimator. Like in the separate logit models there is no statistical evidence for an association between knowledge change and vote switching.

As national second-order elections, EP elections are heavily influenced by national issues, national parties, and incumbent governments. These features may interact with the role of knowledge increases in determining voting behaviour. Firstly, if the Green party is strong in the country of one participant and weak in the country of another participant, the same knowledge increase might lead to different changes in voting behaviour. Secondly, because of the well-established link between economic development and environmental politics (see e.g. Grossman and Krueger 1995), the wealth of a member state may affect the likelihood of knowledge about environmental issues influencing voting behaviour. And thirdly, the temporal distance to first-order national elections might be influential, as participants may be more inclined to vote Green at midterm elections. To address these caveats we replicate the analyses reported in Table 2 but include measures of national Green party strength, distance of the EP elections to the midterm between two first-order national elections, and national economic performance. We also specify interaction terms between these country-level factors and our predictor variable of interest – knowledge change – to check whether our findings are affected by them. The results are reported in the Table 3 and confirm the null findings concerning Hypotheses 2 and 3 reported in Table 2. They show, furthermore, that national Green party strength affects neither the likelihood of deliberators switching to Green parties nor the extent to which this is accounted for by knowledge increase. The temporal distance to first-order elections likewise does not account for differences in the likelihood to switch to the Greens nor does it affect the role of knowledge gains in that regard. The only exception to these null findings is the interaction effect of knowledge change and per capita GDP: here increases in knowledge combine with GDP to be associated with a slight increase in the likelihood of switching to the Green party. However, although statistically significant, this effect is very

small.¹⁰ In the control group, national Green party strength and national wealth are both associated with increased likelihood to switch to the Greens. While not central to our argument, these incidental findings speak to the second-order nature of EP elections and to standard interpretations of support for Green politics as a function of economic development, respectively, thereby providing support for the overall plausibility of our analytical strategy.

[Table 3 about here]

Robustness analysis

In operationalizing our research problem we have made a number of decisions about measurement and sample selection that might have influenced our findings. To check whether they do, we have conducted robustness analyses in which we estimate similar models as those reported in Table 2 but apply these alternative measurement and selection decisions. Details of these robustness analyses are reported in an online appendix. To begin with, the analysis in Table 2 includes respondents who already indicated an intention to vote for the Green party at t1 and who therefore cannot possibly switch to a Green vote between waves 1 and 4. It can be argued that these constitute false negatives that should be excluded from the analysis. We have replicated the analysis reported here after excluding the 27 original prospective Green voters (23 of the sample for which all other variables in the regression models are observed). The results reported in the previous paragraph are robust to this adjustment (Table OA-1).

Next, it is possible that the importance attached to climate change is a more appropriate measure for gauging respondents' attitudes on climate politics than the willingness to accept economic costs. Analogous to the reported view that climate change should be combated politically even if this has negative economic ramifications, high salience of the climate issues should increase the probability of voting Green as well. To test this, we have replicated the models reported in Table 2 using the salience of climate change instead of attitude to model the interactive effect of knowledge gains. As with attitude, the results confirm that knowledge gain has no bearing on party switching in the treatment group (Table OA-2). Knowledge change and salience are associated with vote switching among members of the control group, suggesting that there could indeed be a relationship between knowledge and vote choice. However, these associations are not robust across the numerous alternative specifications tested here and they are not present among members of the treatment group..

Citizens can relate to political parties on important issues other than the general left-right ideological dimension. In the context of EU politics, their views on European integration are a relevant policy dimension. We have therefore measured the distance to the Green party regarding European integration issues. For respondents, we combined a five-point scale of general views on EU integration and a ten-point scale of their assessments of the benefits of EU membership for their country.¹¹ We then calculated the difference between this overall assessment and the respective Green party's position on EU integration as assessed by the 2009 European Election Study. Substituting this measure for left-right distance does not alter the main findings as reported in Table 2 (Table OA-3).

There are also alternative ways of operationalizing knowledge gains. The more information people have, the more new information they are usually able to process and store. However, the measurement of information gains is constrained by ceiling effects: People who already know a great deal have limited opportunity to demonstrate further gains in a standard knowledge quiz (Luskin, 2001). To rule out that possible ceiling effects bias our estimates, we have applied an alternative specification by measuring knowledge *levels* after the experiment (as opposed to changes in knowledge levels between t1 and t4). The results reported in Table 2 are robust to this change (Table OA-4).

Finally, of the two knowledge items concerning climate change, only one might be seen as pointing in a particular direction with respect to policy preference and party choice. Specifically, learning that the approximate percentage of the EU's total energy consumption that comes from fossil fuels is higher than a respondent might have thought *ex ante* could plausibly suggest a reaction in favour of Green politics in Europe. However, learning that China, rather than some other, previously incorrectly stated country, produces the most greenhouse gases, does not suggest adjusting one's party preferences in the same way. To disentangle these possibly heterogeneous effects, we have, firstly, re-estimated the models in Table 2 to predict a different dependent variable: rather than switches in favour of the Greens we have predicted all switches affecting the Greens parties - i.e. both to and away from these parties (Table OA-5). Secondly, we have reduced the knowledge score to the sole item of the share of fossil fuels in the EU's total energy consumption while maintaining directional party switching in favour of the Greens as the dependent variable (Table OA-6). Neither of these alternative measurements alters the results reported in Table 2.

Discussion

In the analysis presented in this article we have investigated whether deliberation about public policy issues affects voting behaviour. To this end, we have broken the research puzzle down into two parts: Firstly, we considered whether deliberation leads to increases in relevant political knowledge. Secondly, we examined the extent to which such knowledge increases affect vote choices. A comparison of means confirmed the expectation that deliberation leads to increases in knowledge about climate change. Furthermore, logit and treatment effect estimates suggest that taking part in deliberation leads to changes in individual electoral behaviour. In our analysis, deliberation increases the likelihood of abandoning an original vote intention and moving to the Green party. However, increases in knowledge do not seem to be the transmission belt by which deliberation leads citizens to re-evaluate their existing party preferences: for the treatment group, coefficients for a measure of relevant knowledge increase are never different from zero across a range of models and robustness checks. Instead, attitudes about both specific issues and general ideological leaning robustly predict vote switching. Vote switching in favour of Green parties is most likely for respondents whose attitudes are not too far away from the Green party, as indicated by the odds ratios for left-right ideological distance and attitudes on climate politics.

With these findings we add to research on the electoral importance of political knowledge of citizens in three ways. Firstly, we have used a more realistic point of reference regarding political knowledge than previous analyses (e.g. Bartels, 1996; Hansen, 2009; Tóka, 2004). Compared to these studies we have utilized additional political knowledge gained in the course of this deliberation that are real rather than stipulated. Our results indicate that these increases in knowledge are considerable.

Secondly, we have analysed information effects in the context of second-order elections, where the heuristics provided by political competition in the electoral campaign are weaker than at first-order national elections. In these contexts, the role of citizens' political knowledge can be especially relevant for their voting decision. But while our findings have shown both knowledge levels and the electoral fortunes of Green parties at EP elections to be higher among voters talking part in the deliberative poll, there is no evidence that the knowledge increases provide the causal link between participation in the polling experiment and changes in vote decisions.

Thirdly, we have analysed the effect of information increases regarding political issues that are potentially relevant for voting decisions. Previous research has concentrated on the effect of increases in generic political knowledge about institutions and politicians, but this may only have a tenuous bearing on electoral choices of citizens. By contrast, we have analysed the effects of issue specific information gains that are relevant in the electoral competition under study. Despite this specificity of the knowledge gains in the area of environmental politics, we have found no evidence that Green parties would benefit from voters that are more knowledgeable in environmental matters.

If knowledge is not the link between deliberating and voting, what accounts for the general treatment effect that leads deliberators to switch to the Greens more often than non-deliberators? It is well established from first-order elections that voters both misreport their voting choices and seek consistency in their responses. While this may not play a great role in the context of the second-order elections to the EP, which are not really about electing a ‘winner’ in the sense of identifying the party or parties that can form the government, a desire to provide answers to the vote question that are consistent with arguments pondered during deliberation might account for some of the treatment effect.

Whatever the causal mechanism behind this effect of deliberation on Green party support, Green political strategists should take note. Green parties are likely to gain votes if the topics that are central to their platforms and manifestos are the subject of intense deliberation. This is only partly due to increases in issue salience that deliberation may produce – in the robustness analysis, salience of climate change is a significant predictor of vote switching among members of the control group. Interestingly, ideological position conceived in left-right terms remains a strong predictor of electoral behaviour even in the context of a party family that is sometimes portrayed as defining itself independently of the left-right controversy. Left-leaning respondents are far more likely to switch to the Greens than right-leaning ones. This suggests that Green political parties throughout Europe are to be seen by now as a solid component of the left political spectrum.

Appendix

Table A-1. Logit model predicting switches to Green vote on socio-demographic variables

| | |
|-----------------|-------------------|
| Male | 1.03 (0.32) |
| Age | 1.00 (0.01) |
| Education | 1.54** (0.23) |
| Class | 1.39 (0.40) |
| Religiosity | 0.75** (0.08) |
| Constant | 0.02*** (0.01) |
| Wald Chi-square | 43.97 |
| Pseudo-R | 0.07 |
| N | 971 |

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Cell entries are odds ratios; cluster-robust standard errors in parentheses.

Table A-2: Summary statistics of variables (treatment and control groups pooled)

| <i>Variable</i> | <i>N</i> | <i>Mean</i> | <i>S.D.</i> | <i>Min</i> | <i>Max</i> |
|--------------------------------------|----------|-------------|-------------|------------|------------|
| Green switcher | 1035 | 0.05 | 0.22 | 0 | 1 |
| Left-right difference from Greens | 799 | 2.46 | 1.89 | 0 | 8.54 |
| Knowledge change on climate politics | 1062 | 0.12 | 0.75 | -2 | 2 |
| Attitude on climate politics | 1034 | 5.97 | 2.68 | 0 | 10 |
| Knowledge change \times Attitude | 1034 | 0.87 | 5.03 | -20 | 20 |
| Propensity to switch | 239 | -4.51 | 3.27 | -10 | 0 |
| Male | 1062 | 0.46 | 0.50 | 0 | 1 |
| Age | 1062 | 49.17 | 16.61 | 18 | 94 |
| Education | 1062 | 2.58 | 0.90 | 1 | 4 |
| Social class | 1005 | 2.01 | 0.82 | 1 | 4 |
| Religiosity | 1053 | 3.81 | 2.24 | 1 | 8 |
| SES instrument (ln) | 998 | -3.22 | 0.79 | -5.42 | -1.54 |
| Treatment | 1062 | 0.31 | 0.46 | 0.00 | 1.00 |

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Table 1. Difference-in-difference comparison of means

| | <i>Mean Knowledge</i> | | |
|------------|--------------------------|----------------------------|------------|
| | Control group (n=729) | Treatment group (n=333) | Difference |
| t1 | 0.604 | 0.685 | 0.081 |
| t4 | 0.608 | 1.054 | 0.446* |
| Difference | 0.004 | 0.369* | 0.365* |

* p<0.001

Table 2. Logit models of switches to Green vote

| | <i>Treatment</i> | <i>Control</i> | <i>Treatment</i> | <i>Treatment</i> | <i>Control</i> | <i>IPWRA</i> [†] |
|------------------------------------|-------------------|-------------------|-------------------|-------------------|------------------|---------------------------|
| L-R distance to Green party | 0.65*** (0.08) | 0.64* (0.12) | 0.62*** (0.08) | 0.68** (0.10) | 0.66* (0.11) | 0.71* (0.10) |
| Knowledge change on climate issues | 0.42 (0.70) | 0.55 (0.55) | 0.45 (1.11) | 0.31 (0.55) | 0.47 (0.44) | 0.07 (0.14) |
| Attitude on climate politics | 1.53*** (0.17) | 1.16* (0.08) | 1.63*** (0.23) | 1.55*** (0.16) | 1.11 (0.09) | 1.66*** (0.22) |
| Knowledge change × Attitude | 1.12 (0.23) | 1.14 (0.15) | 1.11 (0.33) | 1.18 (0.26) | 1.18 (0.14) | 1.37 (0.31) |
| Propensity to switch | | | 1.08 (0.06) | | | |
| SES instrument (ln) | | | | 2.39*** (0.59) | 2.20** (0.65) | 2.81*** (0.74) |
| Treatment | | | | | | 1.08*** (0.02) |
| Constant | 0.02*** (0.01) | 0.03*** (0.02) | 0.02*** (0.02) | 0.16 (0.17) | 0.38 (0.38) | 0.13 (0.17) |
| Wald Chi-square | 91.16 | 20.03 | 138.33 | 134.31 | 45.31 | |
| N | 271 | 489 | 201 | 255 | 464 | 718 |

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. [†] Treatment effects estimation with inverse-probability-weighted regression adjustment (estimates reported for the treated potential-outcome equation only). Cell entries are odds ratios; cluster-robust standard errors in parentheses.

Table 3. Logit models of switches to Green vote with country-level controls

| | <i>Treatment</i> | <i>Control</i> | <i>Treatment</i> | <i>Control</i> | <i>Treatment</i> | <i>Control</i> |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| L-R distance to Green party | 0.66*** (0.08) | 0.67 (0.15) | 0.65*** (0.08) | 0.63* (0.12) | 0.66*** (0.08) | 0.67* (0.14) |
| Knowledge change on climate issues | 0.53 (0.93) | 1.57 (2.62) | 0.44 (0.76) | 0.34 (0.51) | 0.03 (0.09) | 9.38 (31.58) |
| Attitude on climate politics | 1.55*** (0.17) | 1.13* (0.07) | 1.52*** (0.16) | 1.16* (0.08) | 1.51*** (0.17) | 1.19* (0.10) |
| Knowledge change × Attitude | 1.09 (0.23) | 1.11 (0.12) | 1.11 (0.22) | 1.15 (0.14) | 1.13 (0.27) | 1.13 (0.16) |
| Green party strength | 1.06 (0.06) | 1.36*** (0.13) | | | | |
| Knowledge change × Green party strength | 1.00 (0.04) | 0.90 (0.11) | | | | |
| Distance to midterm | | | 0.97 (0.03) | 0.98 (0.04) | | |
| Knowledge change × Distance to midterm | | | 1.00 (0.02) | 1.03 (0.04) | | |
| Per capita GDP (purchasing power standards) | | | | | 1.01 (0.02) | 1.06** (0.02) |
| Knowledge change × Per capita GDP | | | | | 1.02** (0.01) | 0.98 (0.02) |
| Constant | 0.01*** (0.01) | 0.01*** (0.01) | 0.02*** (0.03) | 0.04*** (0.03) | 0.01* (0.02) | 0.00*** (0.00) |
| Wald Chi-square | 84.04 | 66.41 | 99.24 | 68.63 | 106.36 | 41.87 |
| N | 266 | 478 | 266 | 478 | 266 | 478 |

* p<0.05, ** p<0.01, *** p<0.001. Cell entries are odds ratios; cluster-robust standard errors in parentheses.

Notes

¹ In addition, political knowledge is positively related to the propensity of citizens to engage in all types of political activities, including both electoral and non-electoral political participation (Delli Carpini and Keeter, 1996; Verba et al., 1997).

² Some respondents were also surveyed upon arrival at the deliberation venue (t2) and again at the end of the event just before departure (t3). These points of measurement are of no immediate concern to the present analysis; for detailed information on the research design and experimental setup see the article by X in this special issue.

³ 'If you vote, which party do you expect to vote for?'

⁴ Of course, factual knowledge is only one of several epistemic dimensions of deliberation. As Thompson (2008: 507) points out, '[f]rom the perspective of deliberative theory, knowledge of the political views of other participants, for example, is as important as knowledge of issues.' But by the same token, the extent to which participants are informed about public policies, candidate and party positions or government actions, are considered just as important for people to develop more reasoned preferences.

⁵ Respondents were asked the following question: 'On a scale from 0 to 10, where "0" means that we should do everything possible to combat climate change, even if that hurts the economy, "10" means that we should do everything possible to maximize economic growth, even if that hurts efforts to combat climate change and 5 is exactly in the middle, where would you position yourself on this scale, or haven't you thought much about that?'

⁶ Respondents were asked the following question: 'On a scale from 0 to 10, where "0" means you "would never vote for the party", "10" means that you "would always vote for it", and "5" is "exactly in the middle", how likely it is that you would ever vote for each of the following parties?'

⁷ Respondents' gender is coded so that males are 1 and females 0. Education is measured as an ordinal variable of five categories representing comparable levels of secondary and tertiary education. Class is an ordinal variable too, grouping respondents according to their subjective social class into upper class, upper middle class, lower middle class and working class. Religiosity is respondents' reported frequency of attending religious services other than weddings or funerals. Responses to this question fall into seven categories ranging from '[m]ore than once a week' to '[n]ever'.

⁸ With the exception of Denmark and Romania, this is because Green parties have not established themselves in these countries' party systems.

⁹ To rule out the possibility that the estimate is influenced by non-random assignment of respondents to treatment and control groups we also use a treatment effects estimator that removes any differences between the two groups through propensity-score matching. At 0.25 ($p < 0.001$) the effect estimated this way is somewhat smaller than the difference-in-difference of 0.37 but still broadly similar in magnitude.

¹⁰ An increase in the multiplicative term by one unit is associated with an increase in likelihood of switching by only two percent.

¹¹ For the five-point scale, respondents were asked the following question: 'Generally speaking, do you think that [COUNTRY]'s membership of the European Union is ...? "A very good thing" (1), ... "A very bad thing" (5). For the ten-point scale, respondents were asked: 'On a 0 to 10 scale, where "0" means that [COUNTRY] has "not benefitted at all" from being a member of the EU, "10" means it has "benefitted enormously", and "5" is "exactly in the middle", using this scale, would you say that on balance [COUNTRY] has benefitted or not benefitted from being a member of the EU?'