What would happen if we were better informed? - simulating increased knowledge in EP elections

First draft

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Abstract

What happen if the public became better or worse informed? Would it matter for electoral outcomes and which parties would be the winners and losers? The question has the last decade been subject of intense investigation in the American political system. Nevertheless, we still have relatively little knowledge of information effects comparatively – particularly in an European context. This paper examines the consequences on turnout and vote choices if political knowledge changed in Nordic European Parliament elections. It turns out that only a moderate increase in political knowledge results in a 3-3.5 percentage point higher turnout. The relative support for the parties is also affected. The social democratic parties would be the big losers if political knowledge increased. Among the winners are in particular conservative parties. These results hold even if one takes into account that turnout would rise, if knowledge levels increased.

Keywords

Simulation, information effects, turnout, vote choice, European Parliament, political knowledge.
Introduction

What happen if the public became better or worse informed? Would it matter for electoral outcomes and which parties would be the winners and losers? These questions have the last decade been subject of intense empirical investigation, particularly within the American political system (e.g. Bartels 1996; Carpini and Keeter 1996; Althaus 1998; Althaus 2002). Using simulation methods pioneered by Bartels (1996) and Carpini and Keeter (1996), scholars portray the counterfactual situation in which the citizenry is fully and equally informed. While information effects at US presidential (Bartels 1996) as well as congressional elections (Althaus 2001) have been thoroughly investigated, we still have relatively little knowledge about information effects comparatively – including in an European context (Tóka 2007). Therefore, the purpose of the present paper is to simulate the effect of increased knowledge (information effects) for the elections to the European Parliament (EP).

Information effects more specifically estimated for the three Nordic EU members – Denmark, Sweden and Finland - in their elections to the European Parliament in 2004. Using the counterfactual simulation method of Bartels (1996) and Carpini and Keeter (1996), adjusted to a multiparty system, I analyze the consequences of different levels of knowledge on turnout as well as vote choice in each of the three national EP-elections. I also estimate information effects if knowledge is increased (or decreased) gradually and equally for all segments of the population (Hansen 2009).1 Finally, whereas most of the existing literature exclusively examines the effect of a knowledge increase on party vote for the actual voters (e.g. Bartels 1996), I also estimate the vote shares when the simultaneous effect of knowledge on turnout is taken into account.

1 See also Claassen and Highton 2006 who finds that the knowledge gap even increases under intense public debate.
The analysis is carried out using European Election Survey (EES) from 2004. This survey was conducted in the aftermath of the 2004 EP elections and contains responses for vote behaviour for about 1,300 persons in Denmark, 2,100 in Sweden and 900 in Finland. While the EES questionnaire is relatively brief and does not include a knowledge quiz, it does permit me to obtain a valid measure for political knowledge, since all respondents are asked to place several parties on a 10 point ideology scale (Tóka 2007). This allows me to achieve a very information rich measure of relative ideological placement.

Examining information effects in elections to the EP is particularly interesting for at least four reasons. First of all, although the EP has gained increasing importance over the years (e.g. Hix 2002; Maurer 2003), we still have very little knowledge about voting behaviour and general and the role of information in particular in these elections. Second, EP elections are particularly interesting, since they are second order elections in which public engagement is probably substantially lower than in first-order elections. Hence, one might expect EP-elections to be particularly sensitive to information effects (Tóka 2007). However, the actual magnitude and the direction of the effects are by no means clear. Third, as indicated, information effects on electoral behaviour has mainly been studied in the American two-party system (Toka 2008; Hansen 2009). However, since national elections to the EP consist of more than two parties, the EP-elections offer a venue for studying information effects comparatively in multiparty systems. It is possible that information effects are larger in multiparty systems due to a more crowded party space (Hansen 2009). Finally, the existence of the EES datasets allows us to obtain a valid estimate of individual knowledge across political contexts as well as to estimate identically specified statistical models for vote choice for all three countries.
The Nordic countries are chosen as case countries, since excellent previous studies exist on information effects for national level elections (Oscarsson 2007; Hansen 2009). This allows me to compare the information effects from the first order and the second order elections. Since the Nordic countries cannot be considered as representative for the remaining EU countries, the purpose is by no means to claim generalization of the results to all EP-elections.

The structure of the paper is as follows. In the next section, a brief introduction to the relevant literature is given with special focus on previous extensions of the simulation approach to a comparative context. In section 3, appropriate measurement of the key variable, political knowledge, from the European Election Survey is discussed and a measure is constructed. Then (section 4), the simulation methodology is presented. I take departure in the approach pioneered by Bartels (1996) and Carpini and Keeter (1996), adjusted to a multiparty context. In section 5 and 6, the results from the simulations for each of the three countries are presented. First, the effects of knowledge changes on turnout are discussed. Second, I look into the effects of knowledge on vote choice. The information effects on party choice will be estimated both with and without the turnout effect. Finally, the results are discussed with special focus to who are the winners and losers of increased knowledge.

The importance of information

Political information has been of central interest of political scientists for decades (Campbell et al. 1960) An informed public is commonly regarded as a necessary condition for a well-functioning representative democracy (Althaus 2002), since knowledge of the basic functioning of political institutions and its actors can be considered as essential prerequisites for being able to convey one’s

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2 A later version of this paper will include all countries with valid data in the European Election Study from 2004.
predisposition at the polls (Bartels 1996) or when asked in a survey (Althaus 1998; Althaus 2001). Hence, normatively, most observers would prefer the public to be as knowledgeable as possible.

The problem, however, is that the world does not seem to live up to our normative ideals. Since the pioneering work of Campbell et al. (1960), a long survey-based tradition has convincingly taught us that the individual voter is relatively ignorant (Converse 1964; Luskin 1987; Carpini and Keeter 1993). This ignorance may be rational (Downs 1957) but it is nevertheless a problem for the functioning of our democracy, since collective decisions as a consequence cannot be expected to be particularly informed. Furthermore, knowledge is not only low – it is also distributed unevenly such that some groups are particular disadvantaged in the democratic system.

The early pessimism, sometimes labelled the “traditionalist view” (Erikson 2007), has been somewhat questioned by “revisionist” scholars (Page and Shapiro 1992; Erikson et al. 2002). While these scholars do not challenge the empirical observation that individual knowledge is limited, they are relatively optimistic as concerns the ability of the public to provide informed decisions, i.e. the public can act as if it was informed. First, individual opinion may not be uniformed after all even though most individuals hold limited factual political knowledge. Voters can use heuristic shortcuts (Wittman 1989; Popkin 1991; Sniderman et al. 1991) or may take into account information in their opinion that they have processed and forgotten (Lodge et al. 1989). Likewise, the instability in survey responses, initially attributed to public ignorance (Converse 1964), may simply be due to measurement error in our surveys (Achen 1975; Erikson 1979). Secondly, collective choice may be informed though individual opinion is not due to “the miracle of aggregation” (Erikson 2007). The idea here is – using a Condorcet-like logic (Condorcet 1785) – that individual errors cancel out when collective decisions are taken. In fact, in “the Macro Polity” we seem to be doing a very good
job in evaluating politicians, and the public as a whole hold surprisingly stable and consistent opinions (Page and Shapiro 1992; Erikson et al. 2002).

In the last decade a number of studies have empirically simulated the consequences of an ignorant public (e.g. Bartels 1996; Althaus 1998; Althaus 2002), some of which have been relatively critical of the “revisionist” view (Althaus 2002). The purpose has been to evaluate whether individual opinion changes when information levels rises. This is basically done by inferring fully informed opinion of given demographical groups from the opinions of the best informed individuals within those groups. While this method indeed has its drawbacks (which - as I will return to – should lead us to be cautious in our conclusions), it does allow us to obtain a good idea of the magnitude and direction of biases due to ignorance.

Most of the simulation studies have been carried out in an American context. For instance, in his pioneering study, Bartels (1996) finds that the actual voters on average are more Democratic and pro-incumbents than if they had been fully informed. The aggregate deviation of election results from the fully informed vote ranges from 0 to 6 percent in the six examined presidential elections, while the average individual level deviation is 7.5 to 12 percent (Bartels 1996). The overall trend of these results are in Congressional elections confirmed by Althaus (2001) who finds that Republicans are disadvantaged by the low information levels compared to a fully informed citizenry (Althaus 2001). Looking at different specific policy areas both Carpini and Keeter (1996) and Althaus (1998) have found substantial general knowledge effects. Other authors has expanded the argument to include the importance of issue specific knowledge (Gilens 2001).

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3 Related work, not discussed here, use deliberative polls to examine the effect of increased information levels (e.g. Luskin et al. 2002; Barabas 2004; Andersen and Hansen 2007).

4 A similar methodology is used for studying the effect of increased turnout (Tóka 2002; Citrin et al. 2003; Brunell and DiNardo 2004; Martinez and Gill 2005; Bernhagen and Marsh 2007; Sides et al. 2008).
A few newer studies have been carried out in a non-American context. For instance, in Nordic national elections, Oscarsson (2007) and Hansen (2009) both found that Social Democrats would lose support if general knowledge levels increased while Liberals and Conservatives would gain. This seemingly confirmed the conclusions of Bartels (1996) and Althaus (2001) who found Democrats (the most left leaning of the two dominant parties) to be favoured by low knowledge levels. However, the association between low knowledge and left-leaning parties is by no means universal (e.g. Tranter 2007).\(^5\) Also Tóka have conducted several thorough comparative investigations of relationship between political knowledge and various political outcomes (e.g. Tóka 2007; Toka 2008). Nevertheless, there is still need for further results on information effects comparatively in general and in second order elections in particular.

**Measuring political information**

When simulating a fully informed public, a key question is how to measure the key independent variable, political knowledge (or political sophistication, Luskin 1987). Most of the simulation literature seems to agree on two observations about political knowledge. First, knowledge is basically a uni-dimensional phenomenon why it can be captured by a single index (Carpini and Keeter 1993). Second, the items in the index should capture factual questions about politics that are stored in the long-term memory (Carpini and Keeter 1996).

The typical way of arriving at such an index is by adding together several factual questions where individual correct answers are rewarded by a score of 1 and all other responses are given the score zero (e.g. Althaus 1998; Hansen 2009). The higher the respondent scores on the additive index, the

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\(^5\) In Tranter (2007)'s analysis indicate that particularly the Greens would gain from a knowledge increase in Australia.
more knowledgeable she can be said to be. A “fully informed” public is regarded as a public in which all individuals answers correctly on all questions in the knowledge quiz.\textsuperscript{6}

The specific questions used in the knowledge index are up to debate. An often cited recommendation is that of Carpini and Keeter (1993) who in an American context proposes a five item index. The questions concerns party control of the House, veto override percent, party ideological location, judicial review and identification of the vice president.

As other scholars have noted (e.g. Hansen 2009), an important constraint for knowledge studies is the lack of factual questions in surveys. At first sight one seems to run into this problem when studying turnout and vote choice to the EP. The most commonly applied dataset in the survey literature on the EP is the European Election Studies (EES) (e.g. de Vreese and Tobiasen 2007; Weber 2007; Tilley et al. 2008). For the 2004 election, the EES contains samples drawn independently in each of the countries – for Denmark, Sweden and Finland the sample sizes are 1,317, 2,100 and 900 respectively. However, unlike for instance the NES used in most American simulations, the EES does neither contain a factual knowledge quiz (Carpini and Keeter 1993) nor interviewer ratings of respondents (Bartels 1996).

Fortunately, the EES does ask respondents to place parties on a left-right scale. In the American context, the relative ideological location of the two parties has been included in the core measure (four- as well as five-items index) of factual political knowledge index in NES and it was picked by Carpini and Keeter as the second in their regression (Carpini and Keeter 1993; Carpini and Keeter 1996: 305). The measure seems intuitive attractive since it concerns concrete information necessary

\textsuperscript{6} It should of course be noted that fully informed in this respect is a notion which is relative to the way our knowledge scale is composed (Althaus 1998).
to navigate successfully in a political election. Furthermore, a relative placement variable potentially contain even more information in the European multiparty context than in the American two-party context, since one can calculate pair-wise placements between all parties in the system (e.g. Tóka 2007). In addition, it has been suggested that placement variables may have better comparative (i.e. cross-system) attributes than factual questions from a knowledge quiz (Turgeon 2008). Hence, I should be able to fare relatively well with only the relative placement questions.

The EES contains two groups of ideological placements variables. All respondents (in Sweden only two-thirds of the sample) in the survey were asked to place all parties running for the EP in their country on a 10 point left-right scale as well as a 10 point pro-unification vs. anti-unification scale. Hence, all major parties have been placed by the respondents on two dimensions.

Following Tóka (2007), a variable is generated for each of the pair-wise placements on the two scales. In all three systems, the respondents are asked to place 8 parties which give 7+6+5+4+3+2+1=28 pairwise comparisons on each of the two dimensions (56 variables in total) for each country. Next, each of the variables are recoded into four categories dependent on whether 1) Party A is placed to the left (or anti-unification) of Party B 2) The two parties are placed equally 3) Party B is placed left (or pro-unification) to party A 4) The respondent did not place at least one of the two parties (Tóka 2007).

Several strategies exist in the literature to decide which of the relative placements that can be considered correct (or informed) (Turgeon 2008). In this paper I used external expert judgments. For EP elections, the Euromanifestos Project has placed most parties running to the EP on a range of dimensions, including the left-right dimension and the pro-EU.integration vs. anti-EU-integration
dimension with the same scales used in the survey (Schmitt et al. 2009).\textsuperscript{7} Hence, each of the relative placements in the Euromanifestos Project can be directly compared to that of the respondents in the EES such that respondents a given 1 point for a correct placement and 0 for all other placements. Then the number of correct to wrong placements is simply added up by taking the average value on the about 50 variables for each of the three countries.

I also considered a second strategy, simply to take the modal relative placement in the sample as the correct placement (others use mean placement for each of the parties). The advantage here is that the measure does not dependent on any external judgment (as for instance expert judgments). The downside is that if the public as a whole is highly uninformed, the majority view may be the “wrong” answer (Tóka 2007). In practice, results from the two different coding strategies for correct placement were closely correlated – for Denmark the pair-wise correlation between the resulting knowledge score is .94, for Finland .85 and for Sweden .98. Hence, for simplicity, only results from the expert judgement based scale are reported in the remaining of the paper.

As a further validation, I ran an OLS regression for national level voting and demographics on my knowledge index in Denmark as Hansen (2009) did with a thorough factual knowledge index. My results were similar to his – with Left-Wing Alliance and Danish People’s Party scoring lowest on the knowledge index, a curve linear effect of age, and a negative female dummy (results not shown). Furthermore, the results were almost identical for the expert and the modal coding of correct answers.

\textsuperscript{7} Only Sweden differed slightly, since a 11-point scale was used in the EES. However, this should be largely inconsequential for the results
The way the measure is generated above, it scales from 0 to 1, since one basically calculates the proportion of correct answers. The sample means for all three countries are relatively similar. However, the standard deviations are substantially smaller in Finland than in Denmark and Sweden. In order to make the information effects comparable across country, in the simulation I will increase the knowledge variables with an equal standard deviation in each country (as I will return to).

**Simulation methodology**

The simulation approach applied in this paper is adapted from Bartels (1996) and Carpini and Keeter (1996) modified for a multiparty system and my dual purpose of studying turnout and information effects simultaneously. The methodology is relatively simple.

The first step, before any estimation is carried out, is to deal with missing values in the dataset. The knowledge variable contains no missing values, since a “don’t know” here conveys substantive information (i.e. the respondent does not know the answer). However, on the demographical and the predisposition variables needed to carry out the simulation, up to 7 percent of the data is missing due to refusal or inability to answer the questions. The problem is dual. First, the missingness reduces the efficiency of our analyses (King et al. 2001). Second, and most serious, low knowledge respondents are most likely to report an invalid answer for the demographical and predisposition questions (Althaus 2001). For instance, those not reporting a valid predisposition answer in Denmark on average scored 1.2 standard deviations lower on the knowledge index than the sample as a whole. These would completely drop out from the analysis if I had conducted the simulation with list-wise deletion. As a remedy, I multiple impute missing values for all the independent variables using the EM algorithm in Amelia II (King et al. 2001).
In the second step, a multinomial logistic model is estimated for vote choice, including the choice to turn out, on the imputed datasets. When for instance in Denmark 8 major parties are running, 9 dependent categories are included in the multinomial logistic model - one for each of the parties and one for the choice of abstaining (Martinez and Gill 2005). The independent variables are demographical characteristics, predisposition (for an argument, see Althaus 1998; Althaus 2001) and the knowledge variables plus interactions between knowledge and the other variables. (Bartels 1996). The models are weighted such that the average predicted probabilities corresponds exactly to the election results (Hansen 2009). The weighting is primarily necessary due to the under-representation of non-voters in the survey sample.

The number of regressions and coefficients are too many for full presentation. However, table 1 shows part of the Danish model to provide some intuition on how the models were specified. Table 2 provides an overview of the model specification and overall fit for each of the countries.8

[Table 1 and 2 about here]

In the third and final step, the actual simulation is carried out. This is done by predicting probabilities for hypothetical respondents with exact demographical characteristics as the observed ones but with a new knowledge level. In practice this can be carried out by substituting in the data matrix the knowledge and the interaction vectors with the values for a fully informed respondent and predict probabilities using the original model.

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8 In tables 1 and 2 the data are combined with the Clarify module in STATA to take into account our uncertainty about the imputed values (King et al. 2000). However, since the models for each of the imputed datasets proved almost identical results (and since we do not estimate confidence intervals on the simulated predictions), one dataset for each country is for simplicity used in the remaining of the paper.
The simulation method is not without its weaknesses. First and foremost, it is an essential assumption that the fully informed opinion of a demographical group is accurately represented by the respondents within that group with full information (Althaus 2002; Erikson 2007). Furthermore, and related, the simulation is sensitive to misspecification in the vote choice model. If important variables are omitted, the knowledge variable(s) may pick up the variance and the simulated effects of knowledge would be biased. In fact, here seems to be an inherent dilemma. If variables are included through which knowledge has an indirect effect, one would underestimate the effect of knowledge. If such variables are excluded, the effect tends to be overestimated. Finally, the simulation is static – it does not take into account that politicians would alter their positions and strategies if the public became differently informed (e.g. Hansen 2009). This being said, simulated effects have in practice shown to be similar to the ones obtained by Deliberative Polls (Sturgis 2003). Hence, as long as one keeps caution in the conclusion, the simulation method should be able to give a reasonably reliable estimate of the direction and the magnitude of the information effects.

Simulating the effect of knowledge on EP turnout

In the first part of the analyses, I simulate the effect of knowledge on EP turnout. The turnout was 47.9%, 37.8% and 41.1% in Denmark, Sweden and Finland respectively. In comparison, the average turnout at the 2004 EP elections was 45.6% for all countries and about 53% for the EU-15 countries (45% if one excludes countries with compulsory voting).

I conduct the all simulations in two ways. First, I follow the logic of Bartels (1996), Althaus (1998) and Althaus (2001) who calculates the impact of a fully informed public – i.e. a situation in which all citizens are fully and equally informed. Hence, I examine what happens, if all members of the public had a knowledge level of two standard deviations below the mean (fully uninformed) and
two standard deviations above the mean (which is similar to Bartels and Althaus’ notions of a fully informed public). The actual turnout describes the actual knowledge levels at the 2004 EP elections – a situation where knowledge on average is in the middle of the two hypothetical situations and where knowledge is dispersed. The results are depicted in figure 1.

[Figure 1 about here]

The turnout losses and gains depicted in the figure are substantial. If all individuals in the population had 2 standard deviations more knowledge than the actual mean knowledge level, the turnout levels would be 80.5% in Denmark, 68.6% in Sweden and 71.0% in Finland, corresponding to an approximately 30 percentage point increase in all countries (which is still lower than the turnout in the national elections). If all individuals on the contrary were given a knowledge level of 2 standard deviations below the mean, the decrease in turnout would be 16-18 percentage points or a level of 29.8% in Denmark, 19.8% in Sweden and 24.8% in Finland.

A critique of the above simulation is that changes of that magnitude and shape are hardly plausible in practice. Therefore, I also carry out a second simulation in which the knowledge level is changed gradually (0.25 standard deviations at the time) and the relative distances in knowledge levels are kept constant. That is, the simulation depicts what happens if everyone gets better or worse informed from their current level. Such a strategy may be more realistic than simulating a fully (and equally) informed or uninformed public (as in figure 1), since dispersion in knowledge in practice has been shown to be constant or even increasing as the public gets better informed (Claassen and Highton 2006; Hansen 2009). This scenario is depicted in figure 2.
The figure illustrates the proportion voters as a function of the public knowledge levels. At 0, all respondents have their actual knowledge levels. If one moves to the right, the knowledge level is increased 0.25 standard deviations at the time for all respondents and vice-versa to the left.

Interestingly, the lines depicting the simulated levels for the three countries are parallel, indicating that the simulated effect of knowledge on turnout seems to be very equal across country. This may be because the Nordic countries are relatively similar in political and social structure. Finland seems to gain and lose very slightly less than Sweden and Denmark; however, the tendency is almost negligible. If knowledge levels are increased one quarter standard deviation from its current level for all individuals, the effects are 3-3.5 percentage points in all countries, while the effect of a corresponding decrease is 2.5-3 percentage points. This can hardly be considered as a negligible effect. In the improbably situation where all individuals increased their knowledge levels two standard deviations from their current levels, one would expect to see in increase in turnout of 27-29 percentage points.

**Simulating the effect of knowledge on EP vote decisions**

In this second part of the analysis, the simulated effects of knowledge on the vote choices are estimated. First, the information effects are simulated for vote choice alone, when the turnout effect is not taken into account, i.e. vote choice under increased knowledge is only estimated for the actual voters. Second, I include in the analysis those non-voters one would expect to vote if turnout increased - or those who would abstain if knowledge and hence turnout decreased. Furthermore, as in the first part of the analysis, the effects are calculated for a fully informed or a fully uninformed
public (in Bartels (1996)’s and Althaus (2001)’s sense) as well as for the more realistic situation where individuals are moved equally from their current levels (i.e. the absolute differences in knowledge are kept constant).

*Information effects on vote choice excluding turnout*

First, I look at the information effects on vote choices when the increase in turnout described above is not incorporated. This is the standard method in most simulations (e.g. Bartels 1996). For each party in each country, I sum the probabilities of voting for the party in question conditional on the propensity to vote across all the individuals who actually voted. That is, for instance, for the Social Democratic Party in Denmark, I sum across all voting individuals their probability to vote for the social democrats divided by their probability of voting. Figure 3 and 4 depicts the results for Denmark.

[Figures 3 and 4 about here]

The figures indicate that the Social Democratic Party would be the biggest losers if knowledge levels increased (13 percentage points’ loss in the case of full knowledge or 1.5 percentage points from a quarter standard deviation around the mean), while the Social Liberals would be the biggest winners (12 percent gain from full information – 1.2 from a quarter standard deviation). Also Conservative Peoples Party turns out to gain from increased knowledge (2 percentage points or 0.4 from a quarter standard deviation). These results are highly consistent with the findings for Danish national election voting where Hansen (2009) showed that in particular Social Democrat support would decline when knowledge increase. Looking at the EU-sceptical parties, The Movement of
July would gain from a rise in knowledge levels whereas Danish Peoples Party would lose. Hence, it may seem that the left-wing EU sceptics do better than the right-wing under increased knowledge.

[Figures 5 and 6 about here]

Figure 5 and 6 illustrate the Swedish simulation results for vote choice. The results are similar to the Danish ones. The Social Democrats lose support, albeit less dramatic in Denmark (5.5 point percentages compared to 13), while the Conservatives and the June-list gain from increased knowledge levels (3 and 4 percentage points respectively from full knowledge). The Liberals experience a moderate loss as in Denmark. The changes resonate somewhat with the results found in Swedish national elections (Oscarsson 2007) where the Social Democrats support is found to suffer. However, at the national level the Liberals were found to grow while the Conservatives decline (Oscarsson 2007: 315). In the present analysis, the opposite tendency is observed.

[Figures 7 and 8 about here]

Figures 7 and 8 portray the results for the last case country, Finland. Again, the Social Democrats suffer when knowledge levels are increased – for a knowledge level 0.25 standard deviations above the actual, the support declines almost exactly 1 percentage points (full information results in 8.5 percentage point decrease). The National Coalition Party, belonging to the Conservative group in the EP, gains roughly the same amount (slightly above 7 percentage points). This equivalent to what we saw in Denmark and Sweden. Another similarity with Denmark and Sweden is that the most liberal party seems to loose support. In the Finnish case, the Liberal loss almost counterbalances the Conservative gain.
The changes in the three countries add up to figures 9 and 10 where the parties are organized across countries according to their party group membership in the EP. The vote shares are the average vote shares of the group in question in the three countries.

[Figures 9 and 10 about here]

Given what have been discussed, it should be no surprise that the social democratic group (PES) suffers the greatest loses due to increased knowledge (minus 9.1 percentage points). This is very similar to the findings in the American literature where the Democratic Party is found to be advantaged by low knowledge (Bartels 1996; Althaus 2001). The ALDE group manage without major changes but this is exclusively due to the large gains by the Social Liberals in Denmark. In all countries, the most liberal party was expected to bear major loses. The conservative group appears to be the big winner of increased knowledge. The group would on average gain 4 percentage points of the votes if the public became fully informed. The GUE/NGL (1.4 percentage points) and the IND/DEM (2.2 percentage points) groups would both experience moderate gains.

*Information effects on vote choice including turnout*

In the above series of simulations, the vote shares were estimated when the actual voters in the elections were given more or less knowledge as commonly done in the literature. However, as shown in the first part of the analysis, when knowledge increase the turnout rate also increases. This means that one might consider taking into account that some actual non-voters turn out when knowledge levels increase while some voters stay at home, when knowledge levels decrease.
Hence, in this final series of simulations, I include the effect of the change in turnout in the simulated vote shares.

In practice, the turnout effects are taking into account by gradually including the non-voters with the lowest initial probability of abstaining, when the knowledge (and turnout) levels increase and gradually exclude the voters with the highest probabilities of abstaining when knowledge (and turnout) levels decrease (Martinez and Gill 2005). For instance, when full information is simulated in Finland, it is estimated that 71.0 percent of the population will turn out. Thus, the analysis sum the conditional probabilities for all voters that actually turned out (41.1%) plus the 50.9% of the remaining respondents (29.9% of the total respondents), who had the lowest probabilities of abstaining. This method allows me to include and exclude exactly those respondents that would appear most likely to swift from non-voters to voters and vice-versa.

[Figure 11 and 12 about here]

While the inclusion of the turnout effect does not alter the overall trends in Denmark, the inclusion or exclusion of voters does in two instances change the steepness of the curves. The Social Democrats gains less from a decrease in knowledge than estimated in the previous section (3.8 percentage points less gain from a fully uninformed public), while the party lose more from an increase. This is because the voters with the highest probability of abstaining are particularly likely to be Social Democrats, while the non-voters with the lowest probability of abstaining are unlikely to be Social Democrats (see also figure A1 of the appendix). On the contrary, the Liberal Party seems to be gaining from decreased turnout when knowledge levels declines (3 percentage points from a fully uninformed public).
In the Swedish case, the main change is also for the Social Democrats; the effect is even greater than in Denmark. The party’s vote share in fact drops no matter in which direction knowledge change from its actual level. When knowledge increases, the party support drops due to the direct knowledge effect. When knowledge decreases, it loses votes, because its supporters stop voting. Apart from that the effect of increased/decreased turnout are modest (see also see also figure A2 of the appendix). Some of the Moderate Party information effect is offset by a positive turnout effect when knowledge declines while Centre Party gets an extra boost, when the least likely voters drops out.

The Finish case is the only one where the Social Democratic Party does not suffer from the lower turnout that follows decline knowledge levels. Hence, the information effect for this party is almost unchanged when turnout is taken into account. Like in the other countries, the biggest changes due to turnout are when knowledge declines. Most notably, the National Coalition Party loses a couple of percentage points less when knowledge is scarce whereas the Left Alliance seems to the party whose voters are best represented among the most likely non-voters (see also figure A3 of the appendix).
Summarized, taken turnout into account does not alter the knowledge effects fundamentally. The PES parties gains a couple of percentage points less when knowledge levels declines than they would otherwise have done, whereas Liberals and Conservatives are in general advantaged by the turnout effect. This is interesting since it indicates that turnout effects tend to move in the opposite direction of the direct knowledge effects for low knowledge levels. However, as indicated, the direct effects clearly dominate the turnout effects. In general, the turnout effect seems to be smallest when the knowledge levels increase (see also figures A1-A4 of the appendix). This indicates that the voters most likely to abstain are more different from the actual voters than the non-voters least likely to abstain.

**Conclusion**

The purpose of the present paper was to examine information effects in a comparative context – more specifically in the three Nordic elections to the EP in 2004. Utilizing the simulation method pioneered by Bartels (1996) and Carpini and Keeter (1996), the effects of increased and decreased knowledge were estimated on turnout as well as vote choice, excluding and including turnout. The study has its natural limitations: The applied simulation method is – as discussed – not without its problems, and I claim no ability to generalize to other EP-elections. Nevertheless, a range of intriguing conclusions were arrived at.

The first part of the analysis indicated that substantial increases in turnout would be the consequence of more knowledgeable citizens. The turnout effects were remarkably similar across countries. A fully informed citizenry would result in an approximately 30 percent point turnout increase. If all individuals were given more knowledge from their current levels, 0.25 standard deviations corresponded to an approximately 3-3.5 turnout increase.
In the second part of the analysis, the effects on vote choices were computed. The findings largely conformed to existing results from a national level Nordic context (Oscarsson 2007; Hansen 2009) and partly to findings from the American two-party system (Bartels 1996; Althaus 2001). The most unambiguous result from the simulations was that the Social Democratic Parties would lose substantially from an increase in knowledge. In Denmark, the information effect (full knowledge compared to actual knowledge) was about 13 percentage points, while it was 9 percentage points in Finland and 5.5 percentage points in Sweden. Almost as clear was the increased support for conservative parties.

When turnout is taken into account – which is not always done in the existing literature - the main change is that the social democratic gain from decreased knowledge is partly offset by the most likely non-voters opting out. However, the results in general did not alter substantially, when turnout effects were taken into account. Hence, in conclusion, applying the simulation methods by Bartels (1996) and Carpini and Keeter (1996) to Nordic EP-election robustly indicates that social democratic vote share declines when knowledge increase, while the conservative increases.
Reference List


Condorcet, Marquis de, 1785, *Essai sur l'application de l'analyse à la probabilité des décisions rendues à la pluralité des voix.*


Erikson, R. S., 1979, 'Src Panel Data and Mass Political-Attitudes', *British Journal of Political Science*, 9(JAN), 89-114


Toka, G., 2008, 'Citizen information, election outcomes and good governance', *Electoral Studies*, 27(1), 31-44


**Tables and figures**

Table 1: The comparison between Social Democrats and non-voters in the Danish model (the full model includes 8 comparisons in total). Non-voters are the base category.

<table>
<thead>
<tr>
<th></th>
<th>Main effects</th>
<th>Interaction effects</th>
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<tr>
<td></td>
<td></td>
<td>(the variable * information)</td>
</tr>
<tr>
<td>Knowledge</td>
<td>19**</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(7.3)</td>
<td></td>
</tr>
<tr>
<td>Ideology</td>
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<td>-.76**</td>
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<tr>
<td></td>
<td>(.11)</td>
<td>.22</td>
</tr>
<tr>
<td>Gender</td>
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<td>1.3</td>
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<td></td>
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<td>(.85)</td>
</tr>
<tr>
<td>Age</td>
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<td>-1.45*</td>
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<tr>
<td></td>
<td>(.10)</td>
<td>(.21)</td>
</tr>
<tr>
<td>Age Squared</td>
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<td>.004</td>
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<tr>
<td></td>
<td>(.001)</td>
<td>(.002)</td>
</tr>
<tr>
<td>Education (age ending)</td>
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<td>-2.25</td>
</tr>
<tr>
<td></td>
<td>(.22)</td>
<td>(.39)</td>
</tr>
<tr>
<td>Education (age ending) squared</td>
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<td>.004</td>
</tr>
<tr>
<td></td>
<td>(.004)</td>
<td>(.007)</td>
</tr>
<tr>
<td>Self identified class</td>
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<td>-3.0</td>
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<tr>
<td></td>
<td>(.22)</td>
<td>(.43)</td>
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<tr>
<td>Church attendance</td>
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<td>-.31</td>
</tr>
<tr>
<td></td>
<td>(.22)</td>
<td>(.43)</td>
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<tr>
<td>Employment status</td>
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<tr>
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<td>(1.23)</td>
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<td></td>
<td>(.47)</td>
<td>(.91)</td>
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*Note:* Only one comparison from the model is shown. Standard errors in parentheses. Statistical significance: ***=p<.001, **=.001<p<.01, *=.01<p<.05.
Table 2: Overview of the multinomial logistic models.

<table>
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<tr>
<th>Variables</th>
<th>Scale</th>
<th>Denmark</th>
<th>Sweden</th>
<th>Finland</th>
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<tbody>
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<td><strong>Dependent variable</strong></td>
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<td>Multinomial</td>
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<td>$x^{10}$</td>
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<td>Knowledge</td>
<td>Unbounded interval</td>
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<td>x</td>
<td>x</td>
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<tr>
<td>Ideology</td>
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<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Gender</td>
<td>Dummy</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Age</td>
<td>Unbounded interval</td>
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<td>x</td>
<td>x</td>
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<tr>
<td>Age Squared</td>
<td>Unbounded interval</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Education (age ending)</td>
<td>Unbounded interval</td>
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</tr>
<tr>
<td>Education (age ending) squared</td>
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<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Self identified class</td>
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<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Church attendance</td>
<td>(1-5)</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Employment status</td>
<td>Dummy (self-employed/other)</td>
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<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Union</td>
<td>Dummy (Yes/No)</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Rural</td>
<td>Dummy (Yes/No)</td>
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<td>x</td>
<td>x</td>
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<tr>
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<td>x</td>
<td>x</td>
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<td>McFadden</td>
<td>-</td>
<td>.187</td>
<td>.202</td>
<td>.240</td>
</tr>
</tbody>
</table>

*Note:* The model statistics are for the imputed datasets combined. The models are weighted to exactly predict the election outcome.

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9 The analysis distinguishes between Social Democratic Party, Social Liberals, Conservative Peoples Party, Socialist Peoples Party, Danish Peoples Party, Liberal Party, The Movement of June, other parties (Christian Peoples Party, The Peoples’ Movement against the EU, other) and nonvoters - i.e. 9 dependent categories in total.

10 Left Party, Social Democrats, Centre Party, Peoples Party (Liberals), Moderate Party (Conservatives), Green Party, June-list, other (Christian Democrats and other), non-voters - i.e. 9 categories in total.

11 Finnish Social Democratic Party (SDP), Center Party of Finland (KESK), National Coalition Party (KOK), Left League (VAS), Green League (VIHR), other (Swedish Peoples Party, Christian Democrats in Finland, True Finns, Communist Party of Finland, Liberals, other party) and nonvoters – i.e. 7 categories in total.
Figure 1: Simulating the effect of a fully uninformed (all respondents score two standard deviations below the actual mean knowledge level) and a fully informed public (all respondents score two standard deviations above the actual mean knowledge level).

Figure 2: Simulating the effect of increased and decreased knowledge. All simulated changes are relative to the original knowledge levels.
Figure 3: Simulating the effect of a fully uninformed and a fully informed public on vote choice in Denmark when turnout changes are not taken into account.

![Figure 3: Simulating the effect of a fully uninformed and a fully informed public on vote choice in Denmark when turnout changes are not taken into account.](image)

Figure 4: Simulating the effect of increased and decreased knowledge on vote choice in Denmark when turnout changes are not taken into account. All simulated changes are relative to the original knowledge levels.

![Figure 4: Simulating the effect of increased and decreased knowledge on vote choice in Denmark when turnout changes are not taken into account. All simulated changes are relative to the original knowledge levels.](image)
Figure 5: Simulating the effect of a fully uninformed and a fully informed public on vote choice in Sweden when turnout changes are not taken into account.

Figure 6: Simulating the effect of increased and decreased knowledge on vote choice in Sweden when turnout changes are not taken into account. All simulated changes are relative to the original knowledge levels.
Figure 7: Simulating the effect of a fully uninformed and a fully informed public on vote choice in Finland when turnout changes are not taken into account.

Figure 8: Simulating the effect of increased and decreased knowledge on vote choice in Finland when turnout changes are not taken into account. All simulated changes are relative to the original knowledge levels.
Figure 9: Simulating the effect of a fully uninformed and a fully informed public on vote choice across countries and ordered by EP party group when turnout changes are not taken into account.

Figure 10: Simulating the effect of increased and decreased knowledge on vote choice across countries and ordered by EP party group when turnout changes are not taken into account. All simulated changes are relative to the original knowledge levels.
Figure 11: Simulating the effect of a fully uninformed and a fully informed public on vote choice in Denmark when turnout is taken into account.

Figure 12: Simulating the effect of increased and decreased knowledge on vote choice including turnout effect in Denmark. All simulated changes are relative to the original knowledge levels.
Figure 13: Simulating the effect of a fully uninformed and a fully informed public on vote choice in Sweden when turnout is taken into account.

![Graph showing vote share changes for different parties under varying levels of knowledge.]

Figure 13: Simulating the effect of increased and decreased knowledge on vote choice including turnout effect in Sweden. All simulated changes are relative to the original knowledge levels.

![Graph showing vote share changes for different parties under varying levels of knowledge.]
Figure 15: Simulating the effect of a fully uninformed and a fully informed public on vote choice in Finland when turnout is taken into account.

Figure 16: Simulating the effect of increased and decreased knowledge on vote choice including turnout effect in Finland. All simulated changes are relative to the original knowledge levels.
Figure 17: Simulating the effect of a fully uninformed and a fully informed public on vote choice in across countries ordered by EP party group when turnout is taken into account.

Figure 16: Simulating the effect of increased and decreased knowledge on vote choice in across countries ordered by EP party group when turnout is taken into account. All simulated changes are relative to the original knowledge levels.
Appendix

Figure A1: Differences between effects of knowledge when turnout is taken into account compared to when it is not (Denmark).

Figure A2: Differences between effects of knowledge when turnout is taken into account compared to when it is not (Sweden).
Figure A3: Differences between effects of knowledge when turnout is taken into account compared to when it is not (Finland).

![Graph showing differences in knowledge change from current level (standard deviations) for different political parties in Finland.]

Figure A4: Differences between effects of knowledge when turnout is taken into account compared to when it is not (all three countries organized by EP party grouping).

![Graph showing differences in knowledge change from current level (standard deviations) for different political parties across three countries.]

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