

CHANGING PATTERNS IN THE IMPACT OF INFORMATION ON PARTY CHOICE IN A MULTIPARTY SYSTEM

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ABSTRACT

Simulations of changing levels of political knowledge among Danish voters in the 1971 and 2005 general elections reveal a strong impact on party choice. The analysis advances previous simulations from the American two-party system to a multiparty system by applying survey data from the Danish Election Studies. In both multiparty elections, the impact of information has significant consequences for party choice. In 1971, political knowledge seems to be the variable connecting class with party choice, whereas political knowledge seems to be the variable connecting issues with party choice in 2005. The information effects are greater than the effects observed in similar analyses of the American two-party system, thus suggesting a positive relationship between the number of parties and the impact of political knowledge. Finally, the analysis supports the notion that right-leaning parties tend to fare better if political knowledge increases.

The foundation of any well-functioning democracy is an informed and engaged citizenry. Poorly informed voters might lack the knowledge to relate their own fundamental political beliefs and predispositions to the messages broadcasted by politicians, causing a discrepancy between party choice and informed choice, *i.e.*, a choice corresponding better to the political convictions and fundamental values of the individual voter. This paper simulates the effect on party choice if the level of political knowledge of the individual voter was to change.

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The political knowledge possessed by the informed voters better enables them to cut to the core of the flow of the political news and, on that basis, place their mark on the ballot closer to their own political predisposition and fundamental values. Uneven levels of political knowledge among citizens also cause a biased collective preference, not only because less-informed persons might arrive at a different choice if fully informed, but also because less-informed persons are more inclined to abstain from voting. Moreover, in public opinion surveys, this group answers “don’t know” and provide “no opinion” responses more often than fully informed persons, leaving them underrepresented in elections and surveys. This raises questions regarding the usefulness of public opinion surveys, since it presents a biased portrayal of the collective preferences. It also raises questions about surveys as a tool for decision makers to obtain information about the wishes of the public (Althaus, 1996, 1998).

The necessity of informed citizens is a classic discussion in democratic theory and public opinion theory (see Althaus, 2006, for an overview and discussion). John Stuart Mill (1861) placed so much emphasis on the necessity of informed citizens that he proposed a system of plural voting: highly educated citizens ought to be able to cast a greater number of votes than less educated persons. If the citizens could not pass a simple test, their enfranchisement would be lost. All citizens—regardless of their status—should have the opportunity to take the test and qualify to cast more votes. Mill hoped that his system would ensure that citizens without the right to vote would educate themselves and acquire the necessary political knowledge in order to become enfranchised. Mill concludes that: “*universal teaching must precede universal enfranchisement*” (Mill, 1861, p. 330). In Denmark, the introduction of a test in 2007 in politics, history and culture that immigrants and refugees must pass in order to receive Danish citizenship demonstrates that this view still exists. A similar test was introduced in Britain in 2004.

The next section of the article discusses various studies dealing with the effect of information on collective preferences. The article then turns to analyze the uneven distribution of political knowledge in the 1971 and 2005 general elections in Denmark. In the third section, a simulation of the changing levels of information is conducted for the two elections using the Danish election data. Finally, a brief conclusion is provided.

ON THE RELATIONSHIP BETWEEN POLITICAL KNOWLEDGE AND COLLECTIVE PREFERENCES

Within the field of public opinion, the normative ideal concerning the relationship between informed citizens and an enlightened democracy is analyzed and discussed. A number of studies have presented the USA as a country with

low levels of political knowledge (see Delli Carpini & Keeter, 1996, for an overview; and Milner, 2002, for a comparative account). Anthony Downs (1957) presents the lack of knowledge as rational. Downs points out that the incentive for seeking new information is very limited from the perspective of the individual voter, as the probability of a single vote having an impact on the outcome of an election is minimal. The uninformed voters therefore represent “rational ignorants”.

Social psychologists focus on the selective attention of the electorate to political knowledge, together with their selective perceptions of political knowledge—selectivity that confirms previous choices. For example, a liberal voter would typically focus their attention on liberal news channels. If the news flow is ambiguous, then their perception will focus on news that confirms their intermediate choice (Iyengar, 1990; Hansen, 2004). Thus, it is quite natural that research finds holes in the political knowledge of the electorate.

However, there are also a number of more optimistic interpretations raising questions about a pessimistic future for an enlightened democracy based on the low reported levels of political knowledge.

First, there are numerous heuristic shortcuts to political choices, *e.g.*, the charisma, credibility and trust of individual politicians. This reduces the effect of political knowledge to merely one factor among many (Popkin, 1991; Sniderman, Brody, & Tetlock, 1991).

Second, as political knowledge affects different groups of voters differently, the aggregate impact of political knowledge possibly cancels out. For example, if a blue-collar worker acquires more political knowledge, the likelihood that she will vote for a party to the left of center on the left-right political spectrum will likely increase. Conversely, if the political knowledge of a business owner increases, the likelihood of the individual voting for a party to the right of the center of the spectrum would probably increase. In addition to the varying impact of increased knowledge among various groups, the impact of information would also be absent among the least informed persons as long as their answers to the factual questions simply represent a random guess. In other words, it might be difficult to find information effects on the aggregate level, as the individual effects neutralized each other. Consequently, low levels of information might be irrelevant for an election outcome or collective preferences expressed in surveys (Page & Shapiro, 1992).

Lau and Redlawsk (1997) provide another variant of the argument of how the aggregate vote choice cancels out the impact of information. If the citizens vote “correctly” most of the time and the minority voting incorrectly is distributed randomly, we would reach the same collective choice as if all of the citizens were fully informed. “Correctly” is defined as the individual choice under full information. The ideal of fully informed citizens, in addition

to being highly unrealistic, is therefore also unnecessary for democracy to reach informed collective decisions.

Third, the dynamics affecting the use of information by voters is highlighted. When voters are exposed to political knowledge, it is immediately taken into account—in relation to, for example, their party choice—but it is quickly forgotten. That is the online model of information processing (Lodge, McGraw, & Stroh, 1989; Lodge, Steenbergen, & Brau, 1995). In other words, it is natural for many voters to be registered as politically ignorant in surveys, but that does not necessarily indicate that their choice of party is unreflected and/or uninformed (Luskin, 1987, 1990; Bartels, 1996; Delli Carpini & Keeter, 1996; Althaus, 1998; Oscarsson, 2007).

Fourth and finally, in the case of strong public debates and media coverage on an issue, less politically informed persons might be exposed to political information and draw on this information when making their policy choice; strong debate might narrow the effect of information. Nevertheless, Claassen and Highton (2006) find the opposite effect, as the information gap between the highly and less informed appears to increase during strong public debate, the “information rich” become richer, whereas the “information poor” remain unaffected. The notion of the increased knowledge gap is also supported by Craig, Kane and Gainous (2005).

To summarize, the four arguments concerning the relevance of political knowledge are as follows: (i) There are many heuristic shortcuts to party choice; (ii) at the aggregate level, individual information effects are canceled out; (iii) the voters take information into account—and then forget it; and (iv) strong public debates might remove some information effects. These four arguments raise questions about the rather pessimistic interpretation of the lack of knowledge, as it is emphasized that while a large segment of the electorate is rather ignorant in terms of political knowledge, they are nevertheless able to make choices corresponding to their political predispositions.

Despite the extensive debate about the impact of political information on public opinion and voting behavior, there are relatively few studies focusing on this relationship. American simulations of the presidential election with fully informed voters reveal that the incumbent president on average fares 5 percent better than would have been the case if the voters had been fully informed. The Democratic candidate is also about 2 percent better off as compared to fully informed voters (Bartels, 1996). In the congressional elections, the Democrats fare up to 8 percentage points better as compared to an election consisting of fully informed voters, even though there are a few notable exceptions (Althaus, 2001).

Swedish analysis indicates that the Social Democrats would lose 1.4 percent of their support if voters were fully informed, whereas the Liberals would

gain 6.3 percent (Oscarsson, 2007). Bhatti's simulations (2009) of increasing knowledge among Danish, Finish and Swedish voters in the 2004 European parliament election also indicate that Social Democratic parties would lose votes if the knowledge level increased.

Inglehart (1990) has carried out rather extensive comparative studies indicating that cognitive mobilization (a combination of education and political knowledge) renders the voter better able to vote for the political parties advocating their predispositions.

When it comes to public opinion, Althaus (2003) finds an increase in the support for the right to abortion of almost 10 percentage points and a 15 percentage-point increase for free market solutions compared to strong government intervention when simulating fully informed voters. In both cases, furthermore, the majority opinion shifted from one side to the other. Of 235 questions from American election studies, Althaus (2003) finds that the collective preference of fully informed voters differs significantly in relation to 28.1 percent of the questions.

In summary, the empirical analyses indicate that there is an impact of information on public opinion and party choice. Thus, even though the four arguments above might reduce the impact of information, it certainly appears to exist among the citizens. But has the effect changed over time? And is there a shift in the pattern of information effects? This is the focus of the analysis of Danish election survey data from the general elections in 1971 and 2005.

THE UNEVEN DISTRIBUTION OF POLITICAL KNOWLEDGE

There appears to be consensus in the research community that factual political knowledge is the best indicator for measuring the broader concepts of political expertise, sophistication and awareness (Luskin, 1987, 1990; Delli Carpini & Keeter, 1993). Political knowledge is usually measured using a factual knowledge quiz in which the voters are confronted with a number of factual questions on political issues (Delli Carpini & Keeter, 1993). The answers are aggregated to form a political knowledge index in which correct answers give one point and wrong or "don't know" answers give zero points. This approach is also applied in the present study (see also Hansen, 2009).

There is little tradition in Danish election studies to apply knowledge questions. Knowledge questions were applied first in the 1971 study and just recently reintroduced from the 2005 study and forward. However, these two elections actually prove to be a good test of the impact of changing information over time, thus incorporating historical and comparative dimensions into the analysis. Table 1 provides an overview of the correct answers in

TABLE 1 Danish voters' factual political knowledge (percent correct answers)

	1971	2005
Which parties are in the Government? (Conservatives & Liberals)	73	
How many members are there in the Danish Parliament?	40	
(175, excl. the four members representing Greenland and the Faeroe Islands)		
How many countries are members of the EU? (25)	27	
Are the public expenditures for public schools, retirement pension or defense the largest? (Pension)	33	
What party is Frank Jensen from? (Social Democrats)	91	
What party is Jens Rohde from? (Liberals)	63	
What party is Connie Hedegaard from? (Conservatives)	77	
Spending on retirement- and disability pensions is more than half the state budget (incorrect)	30	
Expropriation laws must always be put to a referendum before they can be implemented (incorrect)	30	
Within the last five years, no government has been in minority in parliament (incorrect)	41	
Spain is a member of NATO (incorrect)	40	
West Germany is a member of the UN (incorrect)	10	
Poul Hartling is Denmark's Prime Minister (correct)	92	
Denmark has approved North Vietnam diplomatically (incorrect)	45	
England is a member of the ECC (incorrect)	80	
The ECC is only a trade policy community (correct)	40	
If unemployed persons do not move to take the job offered to them, they can lose their unemployment benefits (correct)	33	
Political knowledge		
Average index (100 = correct, 0 = other answers)	46	58
Reliability (Cronbach's alpha)	.64	.70
Number of questions	8	7
No items correct	3	4
All items correct	2	7
Number of respondents (<i>n</i>)	1,302	2,264

Note: Danish Election Data from 1971 and 2005. The two last knowledge questions used in 1971 excluded from the index and the following analysis, as they weaken the reliability (Cronbach's alpha) of the index. This is probably due to the circumstance that the EEC-question was strongly politicized at the time, *i.e.*, the question pertains to opinion, not knowledge. The question related to unemployment benefits is phrased rather contradictorily, as unemployed persons could lose their unemployment benefits if they refuse to take the job offered to them, but they could not be forced to move directly. Removing the public spending items in 2005 improves the reliability to .73. However, I will leave the item in the index, as the correct answers (retirement pension) cannot be questioned.

1971 and 2005. On two items in both elections, more than 80 percent of the respondents provided the correct answers. It also reveals how in both elections, the questions about politicians provide the highest number of correct answers, whereas only one in three gets the budget question correct.

At the bottom of Table 1, the aggregated results indicate a slight increase in knowledge on average as well as on the correct percentage of items.

Nevertheless, as the items are so different, one should avoid taking this conclusion too far.

By comparison, Swedish studies show that roughly seven out of 10 correctly confirmed that the Swedish Riksdag has 349 members (Oscarsson, 2007). In European comparisons, the Danes were slightly above average in the knowledge test used by the Eurobarometer. Fifty-seven percent correctly responded to a close-ended question that the number of EU member states was not 15 at the time (The European Commission, 2005, 2006). Other surveys have shown that 30 percent of Americans in 1989 could name both of the senators from their state, while 55 percent could name one of them. Nevertheless, cross-country comparison is very difficult, not only because of the different items of knowledge used, different political systems, media structure and education levels *etcetera*, but also due to the amount of guessing and use of the “don’t know” options varying substantially between countries (Mondak & Canache, 2004).

To understand the uneven distribution of knowledge among voters, Table 2 presents two ordinary least squares (OLS) regressions using the political knowledge index from Table 1 as the dependent variable and socio-demographics as independent variables. Table 2 indicates the differences in knowledge between the various groups. Gender, age, employment and education reveal the same patterns in 1971 and 2005. Women tend to answer significantly fewer knowledge questions correctly than men, and the unskilled workers demonstrate a significantly lower level of political knowledge compared to people outside of the labor market. When it comes to education, it becomes clear that there is a direct relationship between education and political knowledge. The coefficients from age and age squared must be interpreted together and suggest a concave relationship between age and political knowledge, where the young and elderly have the lowest levels of knowledge. In comparison with research on political knowledge in Australia, the 2005 significant variables and their directions correspond to an analysis on Australian data (see McAllister, 1998; Tranter, 2007).

Table 2 also includes party choice among the independent variables in order to illustrate whether the level of knowledge differs among the parties after controlling for demographics. As the party choice variables are significant, this is the case. And it appears as though some parties have more informed voters than others; also when accounting for demographic differences. The reference group for party choice is the abstainers, and the fact that all of the coefficients are positive indicates how groups of voters with very limited political knowledge seem to have excluded themselves from politics. The party choice coefficients are highest in 2005, suggesting that the gap between the most and least knowledgeable voters has increased from 1971 to 2005. The increased gap is also confirmed by a significantly larger difference in

TABLE 2 Political knowledge as a function of socio-demographics and party affiliation (OLS regression, standardized coefficients)

	1971	2005
Intercept	.29**	.13**
Women compared to men	-.25**	-.20**
Age (continuous)	.48**	.84**
Age squared	-.54**	-.62**
Education (ref. cat. lower education)		
Skilled labor	.05	.12**
Upper secondary school	.17**	.10**
Higher education	.15**	.25**
Employment (ref. cat. outside the labor market)		
Self-employed	.02	-.01
Lower white-collar worker	.06	-.04
Higher white-collar worker	.04	.03
Skilled worker (<i>e.g.</i> , craftsman)	-.02	-.06*
Unskilled worker	-.04	-.09**
Party affiliation (ref. cat. did not vote)		
Liberals	.14**	.31**
Social Democrats	.13*	.24**
Conservatives	.17**	.23**
The Social Liberals	.08	.22**
Socialist People's Party	.12**	.19**
Danish Red-Green Alliance	Did not run	.14**
Danish People's Party	Did not run	.14**
R ²	.20	.21
Adjusted R ²	.18	.20
F statistic	17.77**	30.88**
n	1,190	2,123

** $p < .05$; * $p < .01$.

mean knowledge score between the most knowledgeable party group and the least knowledgeable group (non-voters) in 2005 compared to 1971 (not shown).

The different levels of knowledge found among the voters of the respective parties suggest that the political parties must communicate differently to voters in order to swing voters with different levels of knowledge as compared to their own core voters. Another form of communication is required, because the level of political knowledge might act as a filter for what the political spin doctors and campaigners can convince the voters to accept.

The asymmetry between the various groups in Table 2 can cause two problems from a democratic point of view. First, the opinions of less knowledgeable voters tend to be underrepresented in opinion surveys on the grounds that they often use the "don't know" option and simply refrain from providing an opinion. As the opposite occurs among the most

knowledgeable, the collected preference becomes biased toward the most knowledgeable (Delli Carpini & Keeter, 1996; Althaus, 1998). This effect is also present in Table 2, which reveals that the election abstainers are the least knowledgeable in 1971 and 2005, meaning that their views might be underrepresented in parliament. The non-voters being the least knowledgeable can also be interpreted in terms of this group having resigned somewhat from democratic participation in elections and not relating to politics at all. This also suggests that if you would introduce a compulsory voting system, thereby forcing the least knowledgeable to vote, you would expect knowledge to have a greater impact on party choice. Obviously, this only applies if the least knowledgeable remain "political ignorants" despite the compulsory voting system and refrain from educating themselves even though they must now vote, which would otherwise increase the total level of political knowledge.

The second problem concerns the quality of the opinions expressed by the less knowledgeable respondents and the danger that they might actually provide opinions contradicting their predispositions and fundamental values and beliefs. Furthermore, the opinions of the less knowledgeable are also among the most unstable, and they are more likely to change party choice between elections and have less consistent political opinions (Converse, 1964; Delli Carpini & Keeter, 1996; Hansen, 2004; Hansen, Slothuus, & De Vreese, 2007).

Thus far, the analysis has discussed the uneven distribution of political knowledge among voters. The next section will examine the impact on party choice if the level of political knowledge changes.

SIMULATING PARTY CHOICE WITH FULLY INFORMED VOTERS

The next step in the analysis is to investigate the impact of political knowledge on party choice. Conclusions based only on the information from Table 2 would suggest that an increase in knowledge is advantageous for the parties above the voter average in terms of knowledge level. However, this would be an excessively hasty conclusion. The effect of knowledge would likely be different depending on, for example, employment and education. The reason why *e.g.*, different employee groups would be affected by an increase in knowledge is in keeping with the argument from the literature about political cleavages (Lipset & Rokkan, 1967; Elklit, 1986). As an example of this effect, Figure 1 illustrates the probability that a voter would vote for a left-wing party, as estimated by a binary logistical regression for each of the six employment groups as a function of the factual political knowledge in both 1971 and 2005.

In Figure 1, the level of knowledge alone determines the probability of voting for a left-wing party.¹ Each line in the figure represents the average probability of voting for the left-wing parties in relation to the level of knowledge for a specific employment group. On the political knowledge scale, 0 indicates no correct answers to the knowledge questions, whereas 1 indicates fully informed voters.

When the level of knowledge for the self-employed or those outside of the labor market is increased, the probability of voting for a left-wing party decreases; however, this tendency is only statistically significant in 2005.

The opposite effect is present among the unskilled workers in 1971, where an increase in knowledge increases the probability of a left-wing vote. In other words, a fully informed unskilled voter has a 79 percent probability of voting for a left-wing party, whereas an uninformed, unskilled voter only has a 56 percent probability of voting for a left-wing party. It is to be expected that these findings would follow the idea that the more informed a group becomes, the more likely it is that this group votes according to their predisposition and general interest (Lipset & Rokkan, 1967; Elklist, 1986).

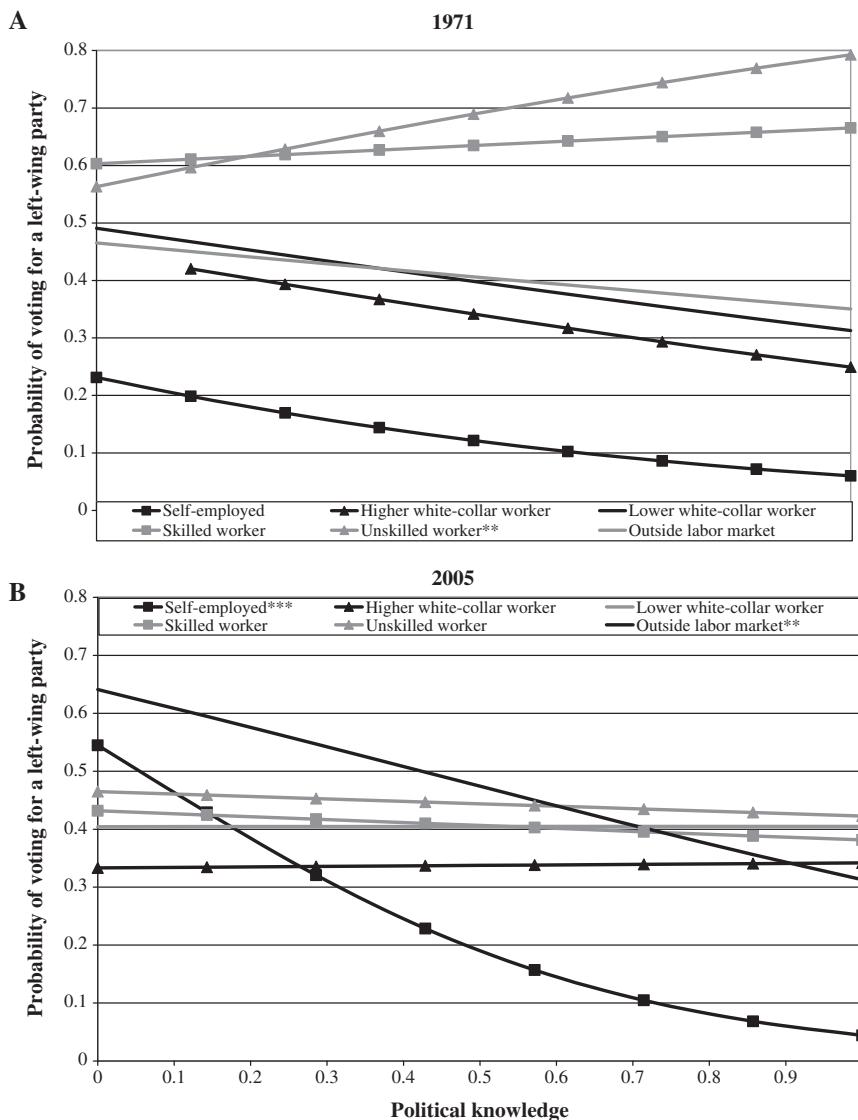
Two interpretations ought to be emphasized. First, the various effects of knowledge on various employment groups change. For some groups, knowledge increases the likelihood that they will vote for a left-wing party; for others, it decreases. The important aspect of this finding is that you cannot conclude that increased knowledge will have an unambiguous impact on party choice. Parties will tend to draw increased support from one group and lose support from other groups as knowledge changes. Furthermore, it indicates that it is necessary to include the effects of various interactions between knowledge and employment in order to understand the impact of knowledge. At the same time, it is also important to stress that it always remains possible to find voters going against the general trend, as the estimate uses the average as the benchmark.

Part of the explanation for the shifts in the information effect patterns is a socio-demographic shift in society: *i.e.*, the increasing level of education and entry of women into the labor market. Furthermore, as issue voting becomes more dominant and issues emerge cutting across the traditional left-right political scale—*e.g.*, European integration and immigration-related issues—party

¹ In 1971, left-wing parties are defined as the Communists, Left-Socialists, Socialist People's Party and the Social Democrats. The reference group is "other parties," including blank votes. n in the regressions varies between 102 and 385 for each employment group. The only significant odd ($p < .05$) ratio is for the unskilled workers. This odd ratio is 2.96.

In 2005, the left-wing parties consist of the Danish Red-Green Alliance (an amalgamation of three left-wing parties), Socialist People's Party and the Social Democrats. The reference group is the other parties. n in the regressions varies between 150 and 771 for each employment group. The two significant ($p < .05$) odd ratios are for the voters outside of the labor market (0.26) and the self-employed (0.04).

FIGURE 1 The probability of voting for a left-wing party as a function of factual knowledge, 1971 (A) and 2005 (B), divided in relation to employment groups. Probabilities from binary logistical regressions. Note: ** $p < .05$; *** $p < .01$. Danish Election Surveys



choice becomes less predictable. At the same time, the class variables (*e.g.*, employment group) have proven to lose their significance as a strong explanatory variable for party choice when comparing the 1971 and 2005 elections (Stubager 2003). Finally, though the Danish People's Party is commonly portrayed as a populist right-wing party (*e.g.*, Rydgren 2004), it is also a

party with a strong welfare state agenda. This has drawn many former socialists to the Danish People's Party since the late 1990s. Since the 2001 election, more Danish wage earners vote for non-socialist parties than socialist parties (Borre, 2003).

The asymmetrical levels of knowledge and the fluctuating effects reveal that more advanced analyses are required to understand the patterns. One possibility would be to apply a multinomial logistics regression model. Thus, a model would allow the dependent variable to consist of multiple categories—as is the case with the party in a multiparty system. Such a model would render it possible to take into account that knowledge has different effects, depending on gender, education, employment, *etcetera*.

The first step in such an analysis following the work carried out by Bartels (1996), Delli Carpini and Keeter (1996), Althaus (1998, 2003), Sturgis and others (2003, 2005) and Gilens (2001) would be to develop models capable of predicting party choice in 1971 and 2005. These two models can subsequently be used to simulate the consequences of changes in knowledge levels. It could be argued, as Althaus (2001) does, that the simulations must also be corrected for turnout. However, the turnout was very high in both the 1971 and 2005 Danish elections: 87 percent. As Table 2 indicates, the least knowledgeable abstain the most from voting, which suggests that including abstainers in the analysis would increase the impact of knowledge on party choice (See also Bhatti, 2009).

As the dependent variable, party choice is divided between five parties in 1971 and six in 2005; a multinomial regression models is applied. A total of 125 coefficients in the 1971 model and 146 coefficients in the 2005 model are estimated, including interaction terms between political knowledge and the other independent variables. For 2005, the calculation of the number of coefficients is: (1 intercept + (15 main effects + 14 interactions effects) * 5 parties coding)—omitting the references categories. That many coefficients would be impossible to present there, thus graphical representation of the models will be applied. In order to give the reader a better chance to understand the procedure, however, Table 3 provides an extract from the full model in 2005. It has been suggested (*e.g.*, Zaller, 1992; Luskin, 2002, 2003) that a non-linear specification of the effects of information are conceivable. In accordance with Bartels (1996: 207–208), however, a variety of alternative specifications of squared knowledge effects and squared knowledge interacted with all main effects fail to improve the model significantly in compared with the simpler linear specification applied here. For example, $-2 \log \text{likelihood}$ 4038.53; df 145 for the linear specification in 2005, and $-2 \log \text{likelihood}$ 3944.45; df 220 for the model including knowledge squared and the interaction terms of all knowledge squared. The likelihood ratio test, which test the difference between the models, provide a *p*-value of .0673, thus adding the knowledge

TABLE 3 The comparison between Danish People's Party and Social Democrats (2005) extract from multinomial regression—the full model include five comparisons; unstandardized beta (std error)

	Main effects	Interactions effects (variable × knowledge)
Political knowledge (0–1)	−8.90 (2.64)***	
Education (ref. higher education)		
Lower education	0.76 (1.19)	0.88 (1.87)
Skilled labor	0.77 (1.16)	1.09 (1.77)
Lower secondary school	1.51 (1.29)	−1.64 (2.04)
Upper secondary school	0.91 (1.29)	−0.17 (1.94)
Church attendance (ref. no)	−0.21 (0.40)	0.21 (0.60)
Member of labor union (ref. no)	−0.36 (0.46)	−0.47 (0.79)
Live in a rental home (ref. no)	−0.28 (0.45)	−0.37 (0.82)
Employment groups (ref. outside the labor marked)		
Self-employed	−0.81 (1.30)	2.54 (2.20)
Lower white-collar worker	0.52 (0.77)	−0.18 (1.48)
Higher white-collar worker	1.83 (1.10)*	−1.28 (1.83)
Skilled worker	0.70 (0.92)	0.13 (1.72)
Unskilled worker	1.13 (0.80)	−1.36 (1.53)
Age (continuous)	−0.03 (0.01)**	0.02 (0.02)
Left-right self-placement (0–10)	0.30 (0.11)***	1.43 (0.23)***
Nagelkerke/Mcfadden	0.65/0.32	
n	1,942	

Note: The multinomial model for 1971 are specified as followed: the independent variables are “education” (four categories), “church attendance” (yes/no), “live in a rental home” (yes/no), “employment groups” (seven categories), left-right position (continuous) based on an index of two items (property rights and free market, both have five categories), “level of political knowledge” (index 0–1), “gender”, “age” (continuous) and “age squared” (continuous). In addition, interaction terms between “political knowledge” and each of the other independent variables were included in the model. The 1971 model has a Nagelkerke of 0.41 and McFadde of 0.17; n = 1,112.

*p<.1; **p<.05; ***p<.01.

squared and all of the interaction terms of knowledge squared do not significantly improve the model.

Table 3 shows that political knowledge is a strong predictor for voting for The Danish People's Party as compared to Social Democrats. The models also produce a very decent pseudo R-squared, suggesting that Sekhon's (2004) worries about Bartels' (1996) original simulation with a poor fit are less of a worry here. The high pseudo R-squared suggests that if Sekhon's (2004) robust estimators approach was developed from the binary models to the multinomial logistical model, we should arrive at roughly the same results as presented here. Moreover, Sturgis (2003) shows how actual shifts in political knowledge level generate similar changes in the course of a deliberative poll as those predicted from the pre-deliberation survey data using Bartels'

simulation method. Thus, Sturgis (2003) also justifies the relevance of the approach applied here.

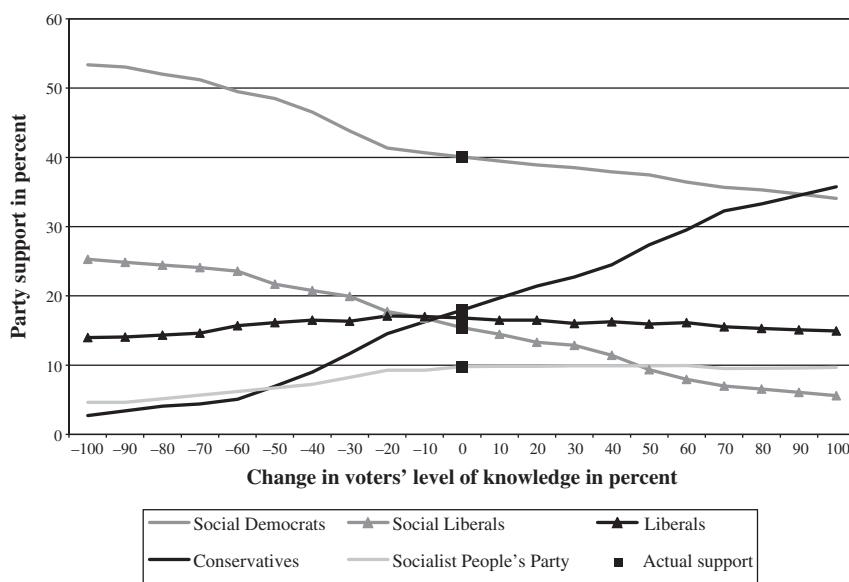
The next step is to conduct the simulations applying the two models when the information levels among the voters are changed. The simulation is not a description of voter behavior; rather, it is a prescription for voting behavior based on changes in knowledge among the “statistical” voters. The statistical voter is a voter with specific characteristics that can be found among voters for the respective parties (*i.e.*, not an actual voter [respondent], but a combination of specific characteristics among voters).

Both simulations involve the application of a three-stage procedure for estimating knowledge changes. First, a multinomial logistical regression with party choice as the dependent variable and socio-demographics, political knowledge and predisposition as the independent variable is estimated. Furthermore, all of the interaction terms between knowledge and other independent variables are included (extract from this model is presented in Table 3). Secondly, the model is then weighted so that it prescribes (forecasts) the aggregated party choice perfectly. Finally, the coefficients from this model are used to simulate the party choice for each respondent, only changing their individual knowledge level but keeping everything else constant.

This counter factual analysis—in the manner of what would happen if the voters become 20 percent more or less knowledgeable—deviates from previous American and Swedish simulations by increasing the knowledge gradually and individually, for example, by adding 20 percent more knowledge to an individual's actual knowledge level instead of simply giving all voters the same high level of knowledge. This approach is more realistic, as it is in keeping with the studies indicating that the highly informed usually also become more informed during learning processes; not only the least knowledgeable. Studies carried out by Luskin, Fishkin and Jowell (2002) and Claassen and Highton (2006) show that the knowledge gap between the information-rich and information-poor widens in an intense information process, in a way that a general increase in education levels in a society or a nationwide information campaign would affect everyone—not only the least knowledgeable—as the most knowledgeable persons would also learn. The approach also allows the fully informed and least informed alike to increase their knowledge, thus dealing with the ceiling effect when measuring those who are already fully informed. Finally, it provides a more nuanced and more plausible sense of information effects as opposed to Bartels' (1996) approach, which moves the electorate from uninformed to fully informed.

In the applied approach, the knowledge inequalities between individuals remain the same during the simulation. In this sense, they provide a somewhat more cautious estimate of the effect of information compared to simply setting

FIGURE 2 Simulation of the impact of changing political knowledge on party choice, 1971



all voters to fully informed.² Figures 2 and 3 present the party support in 1971 and 2005, respectively. Knowledge then gradually changes with a -100 percent to +100 percent interval, *i.e.*, 20 different simulations, one for each 10 percent increase and decrease in knowledge for each the two elections.

² In 1971, the 100 percent individual increase in political knowledge would move the Social Democrats to 31.9 percent, Social Liberals to 8.9 percent, Liberals to 17.9 percent, Conservatives to 30.1 percent and the Socialist People's Party to 11.2 percent. A fully informed vote (level of political knowledge equals 1 for all voters) would move the Social Democrats to 29.6 percent, Social Liberals to 8.8 percent, Liberals to 16.3 percent, Conservatives to 34.3 percent and the Socialist People's Party to 11.0 percent.

The actual election result in 1971 (only considering the parties which gained election to parliament) was Social Democrats 40.1 percent, Social Liberals 15.4 percent, Liberals 16.8 percent, Conservatives 17.9 percent and Socialist People's Party 9.8 percent. In other words, the different methods move 4.2 percentage points more from the Social Democrats and the Liberals to the Conservatives when using the fully informed approached as compared to the 100 percent increase in political knowledge.

In 2005, the 100 percent increase in political knowledge would move the Social Democrats to 21.3 percent, Social Liberals to 12.7 percent, Liberals and Conservatives to 41.7 percent, Socialist People's Party to 7.0 percent, Danish People's Party to 9.4 percent and Red-Green Alliance to 7.8 percent. Setting all respondents to fully informed (political knowledge equals 1 for all voters) would move the Social Democrats to 23.5 percent, Social Liberals to 12.4 percent, Liberals and Conservative to 48.2 percent, Socialist People's Party to 6.6 percent, Danish People's Party to 2.2 percent and Red-Green Alliance to 7.2 percent.

The actual election results in 2005 (only considering the parties which gained election to parliament) was Social Democrats 26.6 percent, Social Liberals 9.5 percent, Liberals and Conservatives 40.5 percent, Socialist People's Party 6.2 percent, Danish People's Party 13.7 percent and Red-Green Alliance 3.5 percent. In other words, the fully informed vote compared to a 100 percent increase in political knowledge would move 6.5 percentage points more to the Liberals and Conservatives from the Danish People's Party.

FIGURE 3 Simulation of the impact of changing political knowledge on party choice, 2005

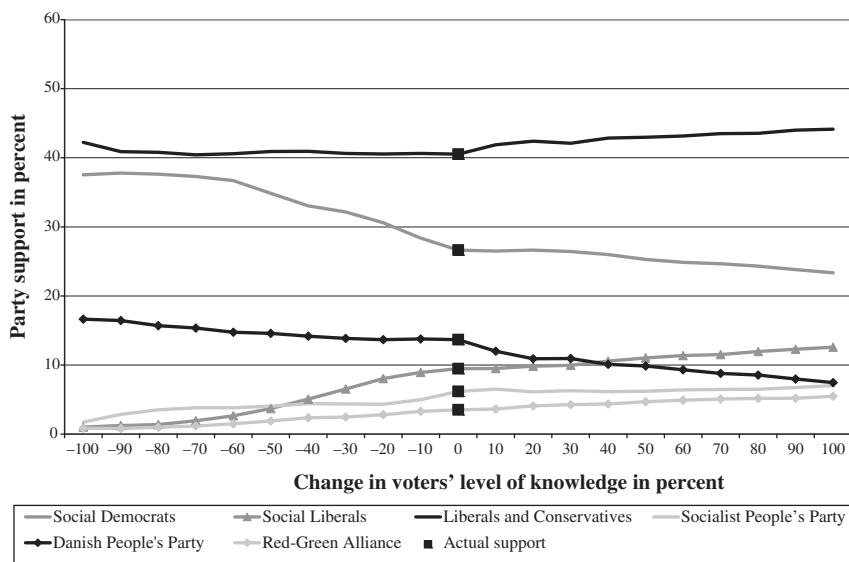


Figure 2 simulates the effect on party choice when political knowledge is decreased and increased in 1971. The first interesting observation is the strong positive effect of knowledge on support for the Conservatives: doubling the level of knowledge almost doubles the support enjoyed by the Conservatives. The Social Liberals and Social Democrats lose support, whereas the Socialist People's Party and Liberals are almost unaffected by increases in knowledge.

Figure 3 shows the effect of knowledge in 2005. The Danish Red-Green Alliance and Social Liberals would win support if knowledge is increased, whereas the Danish People's Party and Social Democrats would lose support. The Danish Red-Green Alliance would gain more than 4 percentage points and more than double their support in parliament as compared to the election result.

If the knowledge level declines, the Social Democrats gain support while the Social Liberals and left-wing parties lose support. That is, if the knowledge is 0 (100 percent decrease of knowledge) the Social Democrats would win almost eight percentage points, while the Social Liberals would lose more than nine percentage points. This corresponds to an almost 29 percent increase for the Social Democrats and an almost 62 percent decline for the Social Liberals. The Liberals and Conservatives remain relatively unaffected by a decrease in knowledge.

Considering the two elections together, the Social Democrats lose support and Conservatives win support in both periods.

In both elections, the effects of declining knowledge are the strongest. In 1971, the net volatility of the parties of a 100 percent decrease was 25, whereas it was 15 in the instance of an increase of 100 percent (*i.e.*, the numerical difference between the party's actual support and simulated support, divided by two). In 2005, the net volatility was 13 to 10 for the same interval. Comparing these changes with the actual volatility between elections in Denmark, these effects are considerable. The volatility was 9.5 in 1971, 7.7 in 2005. In other words, the effect of fully informed voters has a greater impact than the actual electoral change from election to election. Furthermore, the effect of knowledge was greater in 1971 than in 2005.

One interpretation of this changing pattern of the impact of political knowledge is that political knowledge appears to have changed its signifier as the intervening variable; in 1971, political knowledge helped connect class to party choice, whereas in 2005 political knowledge seems to be the variable helping voters disconnect themselves from the "one class, one party" tradition. It is much more demanding (in terms of information) to obtain an informed position in an era of issue voting compared to an era of class voting, which can help explain why the impact of party voting on knowledge increased from 1971 to 2005 (see Table 2). In addition to this explanation, Denmark and many other western democracies have witnessed new political cleavages which have cross-cut the traditional left-right dimension (Dalton, Flanagan & Beck, 1997). Party choice has shifted from the dominant traditional left-right cleavage in 1971 to a party choice influenced by many cleavages in 2005 (Borre & Goul Andersen, 1997). This also suggests that the importance of political knowledge has changed from the intervening variable between class and party choice to the intervening variable between issues and party choice.

Another interesting observation from the two figures is that the party choice of a fully informed electorate in 1971 and 2005 would have changed the power distribution substantially within the left and right groups of parliament, but the coalition government would have remained the same as the result of the actual elections. There is also somewhat of a methodological explanation as to why the distribution of power between the blocks is affected less than the distribution of power within the block. The logistical regressions include one predisposition or ideological variable (left-right self-placement), and this variable is not allowed to vary when the simulations are conducted where only the level of knowledge varies. Althaus (1998) and Oscarsson (2007) also use this approach. The assumption behind this approach is that a change in knowledge does not affect the fundamental value and predisposition; it merely increases the ability of the voters to choose a party corresponding to their predisposition. Excluding predisposition from the regressions would only have made the impact of knowledge even greater.

The first conclusion in a more comparative perspective is that knowledge plays a strong role when analyzing the electoral support of the various parties. The effects found are greater than in the Swedish case (Oscarsson, 2007) as well as the American case (Bartels, 1996; Althaus, 2001). The number of parties is much larger in the Scandinavian multiparty parliamentary system than in the American two-party system. The existence of more parties allows the impact of political knowledge to push the voters to several other parties; not just one, as in the American case. In other words, the aggregated effect of knowledge will, *ceteris paribus*, be greater in a multiparty system than in a two-party system. The more crowded the political space, the more likely it becomes that minor changes in political knowledge affect the voter's party choice. Or turned on its head: the fewer the number of parties, the more likely it is (simply by chance) to cast the same vote as though one is fully informed, even if voters are not.

Another conclusion in a comparative perspective is the tendency for right-leaning³ parties to gain support as political knowledge increases, whereas left-leaning parties tend to fare better if knowledge decreases. These patterns are consistent over time in the Danish case, and the same patterns are found in the U.S., Sweden and Finland⁴. As this tendency is consistent over time and political system, it suggests that it cannot be explained by variations in different political cultures and systems, but rather other factors that are fixed or predictions across time and space. This opens up a new comparative research question aiming to identify what these factors consist of. Do they consist of political, social or economic factors? Or could it be a matter of how the right-leaning parties communicate their political agendas as compared to the left-leaning parties?

CONCLUSION

A somewhat politically enlightened electorate is desirable in order for a democracy to be based on the true wishes of the people. While most political thinkers probably would agree as to the desirability of an enlightened electorate in order to have an enlightened democracy, political thinkers disagree regarding the degree of political knowledge necessary. This controversy can be summarized as a debate between elite and deliberative approaches to democracy. In the elite approach, the need for an informed public is argued to be less important, as the aggregation of opinions and heuristic shortcuts to political knowledge removes the need for a fully informed public. On other hand,

³ Right-leaning parties are defined as the Conservative and Liberal parties in the Scandinavian context, and the Republican Party in the American context.

⁴ However, it must be recognized that Toká (2002) does not find this pattern in cross-national simulations, but the difference in the simulation approach make the comparison different than the simulations presented here.

the deliberative approach emphasized the need for an informed public as a necessity for the voters to make a qualified assessment of the various political parties and their politics: a choice that should closely link party choice, pre-disposition and the fundamental values of the individual.

The least knowledgeable persons are also those who abstain from voting the most in both of the Danish elections under investigation—1971 and 2005. Furthermore, the difference between the most and least knowledgeable increased from 1971 to 2005, suggesting a polarization of the electorate in terms of political knowledge.

In sum, two conclusions should be emphasized: first, the analysis and simulation of increased knowledge have clearly shown that political knowledge is asymmetrically distributed between various electoral groups in both the 1971 and 2005 elections. Women, youth, the elderly and persons with limited or no education have significantly less knowledge. This means that the voice of these groups would be expected to be unrepresented when expressed in general elections and opinion surveys, but also misleading compared to the voice of the groups if they were fully informed.

Secondly, simulations of gradual increases to knowledge levels show that the Conservatives win support in 1971, whereas the Social Liberals gain support in both elections and The Danish Red-Green Alliance win in 2005. On the other hand, the Social Democrats lose electoral support in both elections when knowledge increases. This changing pattern illustrates how the impact of information can vary over time. In both elections, however, a fully informed voice of the people would have caused a redistribution of power within the two blocks in the Danish parliament.

As a possible explanation to these effects, it has been suggested that political knowledge might have obtained a new position: from being an intervening variable between class and party choice to an intervening variable between political issues and party choice.

In a comparative perspective, political knowledge demonstrates a greater impact in a multi-party system simply due to the number of competing parties as compared to a two-party system. Another comparative tendency in relation to time and country is that right-leaning parties tend to increase their support if political knowledge increases, and this tendency is consistent over time and observed in the U.S., Sweden, Finland and Denmark.

Our understanding of the relationship between political knowledge and party choice remains far from complete. First of all, the approach applied here is a very static approach, as it does not consider how parties react in the event that the electorate becomes more knowledgeable. Undoubtedly, political parties would somehow react to a shift in the electorate in order to survive, thus creating a counter-reaction to the effect described here.

Finally, even though gradually increasing the levels of political knowledge in the simulations improves the realism in the simulations, there is still a long way before these types of simulations can include the selective attention and perception of information as experienced by voters in the real world.

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