

Widening or Closing the Knowledge Gap?

*The Role of TV and Newspapers in Changing the Distribution of Political Knowledge**

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Abstract

The public has gradually become more dependent on the mass media for their political information as alternative channels of political communication have been marginalized. Political knowledge is not equally distributed, and according to the knowledge gap hypothesis, the gap between the most and least knowledgeable is likely to widen due to the pattern of media consumption, the different content of printed media and TV, and the abilities of the audience as linked to educational differences. Most of the empirical research on the knowledge gap hypothesis has been done in the USA, a media system very different from those of the Nordic countries. The strong tradition of PB TV and the high rate of newspaper consumption make the Norwegian media environment favourable for political knowledge gain, but it may, for the very same reasons, lead to a widening knowledge gap, according to the knowledge gap hypothesis. In the present paper, the impacts of TV and newspaper consumption on the distribution of political knowledge are studied. Two hypotheses are tested: TV exposure as leveller and newspapers exposure as enhancer of the knowledge gap. The empirical analyses are based on the 1997, 2001 and 2005 Norwegian election studies.

Keywords: knowledge gap, political knowledge, public broadcasting TV, newspapers, stratified audience

Introduction

In a democratic society, we are all supposed to be political experts of some sort. What we do not already know about politics we are capable of learning (Dahl 2002). The development of electronic media has clearly enhanced the technical capacity to distribute information to all strands of society, but thus far the political knowledge gap persists, and according to some researchers, the differences between TV and newspapers is causing it to widen. The “masses” learn next to nothing from the TV, whereas the elites gain knowledge through consumption of printed media. It is a matter of discussion whether it is the media content, the properties of the media itself, the characteristics of the audi-

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ence they attract, or the motivation for the media use that is decisive. However, some argue that TV has a unique capacity to close the knowledge gap, because TV reaches out to groups less likely to be exposed to political information through other channels, especially printed media. Prior empirical research from Norway has supported this argument (Torsvik 1972), but the present empirical analysis, based on the 1997-2001 and 2001-2005 election study panels, does not. Exposure to political information through TV does not close the knowledge gap. Some possible interpretations of this finding are discussed.

The Knowledge Gap Hypothesis

In the most influential formulation of the knowledge gap hypothesis, the focus is on the link between socioeconomic status and changing level of knowledge (Tichenor et al. 1970). In the discussion, it soon becomes clear that “socioeconomic status” serves as a collective term for several distinctive arguments and variables focusing on media content, ways of life in different social strata, personal skills and motivation and the cumulative nature of knowledge itself. Education may serve as an indicator of social status, but much discussion of the sub-hypotheses is focused on the impact of education as such (cf. Tichenor et al. 1970: 162):

- Formal education enhances individual reading skills and intellectual capacity.
- People in the higher social strata have broader experiences and more reference groups. Hence they are more likely to discuss new information in their milieu.
- Higher education motivates people to pay attention to the news.
- The content of printed media is directed towards the higher status groups.
- Knowledge tends to be cumulative: The more information a person has stored, the better prepared she or he is to understand new information

Because the news agenda shifts rapidly, the knowledge gap seldom closes before new information is introduced, according to Tichenor et al. This argument leads to a rather pessimistic view of the chances of ever closing the knowledge gap. However, in the concluding section of their seminal article, Tichenor et al. (1970: 170) discuss the possibility that TV will be able to reach out to the less educated in a way that will narrow the knowledge gap: *Since television use tends to be less correlated with education, there is a possibility that television may be a “knowledge leveller” in some areas.*

The comprehensive review of the knowledge gap literature offered by Viswanath and Finnegan (1996) demonstrates that all these second-order hypotheses discussed by Tichenor et al. have initialized subfields of research (c.f. Kwak 1999). The present study focuses on the role of different media in distributing political knowledge and hence on the width of the knowledge gap in a media system with a strong public broadcasting (PB) tradition.

The Advantage of the Printed Media and the TV as the Great Leveller Arguments

The superiority of the printed media in communicating political information has more or less been taken for granted. Printed media have been *the* form of communication for social elites, including the political elites. The political parties organized in the nineteenth and early twentieth century launched newspapers to spread their worldviews. The craft of political information and propaganda through text was refined by journalists who often went on to become professional politicians.

In the research literature, the supposed superiority of newspapers is explained in different ways. Volume matters; newspapers are superior to TV with regard to the proportion of information volume. There is simply more to be learnt from newspapers. The format of newspapers makes it possible for the reader to skip everything unimportant, such that the search for relevant information is time effective. The greater volume enables journalists to go into greater detail, to provide more background information and to be more analytical. Some also argue that journalistic processing of the information is vital. The logical structure of printed information is such that it helps the reception, acceptance and storage of new information, i.e. the structure of the text matches the way we process and store information. Certain journalistic forms of presentation (the inverted pyramid, filtering of information, etc.) are claimed to enhance effective learning (Rumelhart and Norman 1985). And finally, the editorial clues (headlines, position on the page, in the paper, etc.) in newspapers tend to direct the reader towards those articles considered most important by the editors, i.e. societal and political issues (Tweksbury and Althaus 2000).

According to the knowledge gap argument, books and quality newspapers are media directed at and consumed by the upper social strata. It is the wider reach of television that makes this medium interesting, according to Tichenor et al. (1970). Groups that score low on consumption of books and newspapers are often exposed to large doses of television. Assuming that television conveys relevant political information in a format attractive to its audience, TV may help to close the knowledge gap. The existence of an “inadvertent audience” can be linked to the knowledge-leveller argument. According to Robinson (1976: 426), “the inadvertent audience” is that part of the TV audience that “falls into the news”. This “audience within the audience” is not primarily interested in news, but sits through news programmes because they take an interest in the programmes preceding or following the news. This audience is unlikely to read much about politics in the newspapers; they generally have lower education and social status than the advertent audience, and they are less likely to be exposed to mediated political information from opinion leaders. In other words, TV has a unique capacity to educate this large audience through “accidental learning” (Prior 2007). However, the inadvertent TV audience may be shrinking. Prior (2005; 2007) points out that the increased supply of TV entertainment makes it easier for everybody to find their preferred media content at any time. Hence, people who prefer entertainment over news are less likely to “fall in to the news” than was previously the case.

The power of TV is not just a consequence of its wider reach. The content of TV news broadcasts should not be regarded inferior to that of newspapers. Neuman argues that the alleged differences in media content between TV and printed media is exaggerated, and that “strong similarities characterize the political coverage of all media” (1986: 140). Newspapers are likely to make use of news content reported by the TV news and

vice versa. In other words, the wider reach of TV is sufficient to make it the more potent medium. TV is more capable of breaking the attention barrier than printed media. TV is “stronger” than printed media and radio. The combination of sound, motion and colour command attention in a way the printed media does not. McLuhan’s truism – “The media is the message” (McLuhan 1964) – may be an exaggeration, but Neuman et al. (1992) report that the audience find TV more attention-grabbing, more emotional, more surprising and more vivid than newspapers and magazines covering the same stories. In brief, TV is seen as the more attractive medium by most people. And because TV is seen as more entertaining, the audience pays more attention to it and (unintentionally) learns more from it. The same group of researchers also argue that people learn more from TV because they perceive it as an easy medium. Quoting Salamon (1984), they argue that “Television is easy. Print is tough”. More recently, Graber et al. (2008) and Blum (2002; 2005) have argued that people may even learn from TV entertainment such as TV dramas, talk shows and satire.

According to the review by Viswanth and Finnegan (1996), the empirical support for the hypothesis that exposure to printed media tends to increase the knowledge gap is firm. The results from the studies on the impact of TV exposure are mixed. The majority find a narrowing gap or no gap at all. Viswant and Finnegan (1996: 201) nevertheless conclude that: “The more common finding in the literature, however, is that although television has the potential to increase knowledge among lower-SES groups, its record as an information provider has been poor because it has emphasized entertainment rather than learning”. This pessimistic conclusion seems to have gained momentum in the years that have passed since Viswant and Finnegan’s review. Many American researchers seem to have given up on TV as a “public educator” altogether, not to mention as an instrument of levelling the knowledge gap. Bennet (2001: 232) argues that: “most [TV] news reports invite us to escape for a minute or two into the world filled with pathos, tragedy, moral lessons, crisis, mystery, danger and occasional whimsy”. The TV news audience is shrinking (Althaus 2002), and the trend towards “soft news” is one reason for this development (Patterson 2000). Soft news may be interesting as a distraction for a while, but in the long run it cannot be a substitute for the hard news, according to Patterson. Related critiques of the content of modern media, in general, and TV, in particular, are numerous. Some (e.g. Newton 1999, Norris 2000) have described them as the theories of “media malaise”. The supply of news coverage, in general, and the coverage of politics, in particular, has declined on the main TV networks and – even more importantly – the media audiences seem to be structured so that the people with the lowest level of knowledge are least exposed. The increased supply of cable TV has led to a widening gap between the “news addicts” and the larger group of “news avoiders” (Prior 2005; 2007). In short: TV lacks the informative content, the reach of the leading TV news stations is shrinking, and the media audience is structured so that the people with the lowest level of political knowledge are also those who are *least* exposed to hard news and informative programmes.

The Knowledge Gap in a “Democratic Corporative” Media System

Before taking on the main research question, it is necessary to consider some aspects of the media system itself. The knowledge gap literature is mainly based on empirical work done in the US, the archetypical “liberal media system” (Hallin and Mancini

2004), which lacks the significant PB TV and radio of Northern Europe. Studies from “democratic corporative” media systems are few and far between. Although Hallin and Mancini seem convinced that a process of media system convergence is taking place, the differences are nevertheless still evident and justify a closer look at the knowledge gap argument in a North European context. After all, the strong public broadcasting systems were set up with the explicit ambition to close the knowledge gaps in their respective populations.¹ To accomplish this, it was necessary to overcome the problems described above: the media content must be informative, and the mass media must be able to reach out to all groups, even those with a minimum of prior political knowledge.

Media consumption in Norway is high and increasing (Vaage 2009). The epoch of the party press is definitely over (Østbye 1997, Bjørklund 1991), and the printed media have been superseded by TV. As early as the 1980s, the average Norwegian spent twice as much time watching TV as compared to reading newspapers. And this shift in media consumption has continued since.² Newspaper circulation has remained high. The introduction of commercial television led to a rapid expansion of the supply of TV and an increase in TV consumption. Public Broadcasting has nonetheless remained strong, and the leading commercial channel has not ignored news broadcasts and political journalism. On the contrary, TV2 has tried to compete on Public Broadcasting’s home ground. Empirical studies have highlighted the striking similarities rather than the differences between the news broadcasts from the two (Syvertsen 1997, Sand and Helland 1998, Waldahl et al. 2009). The result is that the “news addicts” can watch news broadcasts containing some “hard” political news on the two main channels six times every evening and watch at least four debates a week. If the supplementary channels from the two major broadcasters, the regional broadcasters and the smaller TV broadcasters are taken into account, the supply is even greater. In addition, a number of documentaries, special reports on Foreign affairs, etc., are offered. Norwegian viewers with an interest in politics will find something to watch every evening. Twenty-one hours and thirty minutes of news and current affairs programmes are offered in prime time every week. Unlike some other countries with “democratic corporative” media systems, the private channels have contributed considerably (Aalberg et al. 2007). So far, the supply of TV news broadcasts and current affairs programmes has been more than adequate, at least with regard to volume.

A pessimistic view of media use and knowledge gap holds that many people develop media habits that keep them away from informative media, i.e. that the less politically interested and knowledgeable develop a preference for entertaining but uninformative media, whereas the knowledgeable seek out the enlightening media. The least knowledgeable are led into a downward spiral because their media habits make significant political information hard to come across, even if, for some reason, they tried to find it. Many researchers argue that any information campaign must have a certain intensity and duration to succeed (More 1987, Nadeau et al. 2008, Zaller 1992). Because most people do not actively seek out new information, they must be made aware that “something” is going on through the media channels they are habitually exposed to. Even increased awareness may not help, unless the media habits change as well. According to Neuman’s “inverse law”, audience size and political media content are inversely linked. He argues that “the higher the level of abstract, issue-oriented, political content, the smaller the audience it is likely to attract” (Neuman 1986: 137). As long as entertainment programmes

are available, the large audiences will escape more demanding programmes like political commentary and debate. Eventually, the analytical, in-depth political information will only be found in the marginal media channels. The increasing supply of TV entertainment has made this “escape” more available (Prior 2005), and consequently, the news audience has shrunk in the US (Althaus 2002). Vetten et al. (2004) argue that the most sophisticated and knowledgeable voters seek out the media with the more elaborate, in-depth coverage of politics. They find empirical support for this hypothesis in a cross-sectional Dutch survey.

The captivating logic of the “inverse law” makes it easy to forget its basic premise: that media habits are structured mainly by level of political interest. One could argue that only two minorities – the most politically interested, on the one hand, and the alienated and people with strong anti-political sentiments, on the other – will adjust their media habits to fit their orientation towards politics. The majority is more likely to develop media habits based on a mixture of practical considerations and preferences unrelated to politics. If the latter argument is correct, the level of exposure to political information will be more dependent on the overall media content than on individuals’ orientations towards politics.

Unfortunately, the available survey data on the population’s assessments of the importance of various sources of political information, and the public statistics on media consumption, do not utilize similar categories, so we cannot compare these directly. Nevertheless, some observations can be made. TV comes out on top both in terms of daily audience (80% according to Vaage 2009) and as a “very important” source of information on the campaign, according to the election survey (48% in Figure 1). Sixty-eight per cent report reading a newspaper on a daily basis and 27 per cent regard national newspapers as a very important source. In addition, 24 per cent find local and regional papers very important. Although daily use of the Internet is reported by as many as 71 per cent, only 9 per cent consider Internet editions of newspapers an important source of political information. Only 3 per cent rate the Internet (Internet editions of newspapers omitted) as very important. Fifty-four per cent listen to radio on an average day and 15 per cent rate it as a “very important” source. The overall picture is that general media consumption and the rating of the various media as sources of political information go hand in hand, but that newspapers are assessed as a more important source of political consumption, while the Internet is considered less important than their share of overall media consumption suggests. These observations do not support Neuman’s “inverse law”: on the contrary, they suggest that the most popular media are also assessed as the premier source of political information.

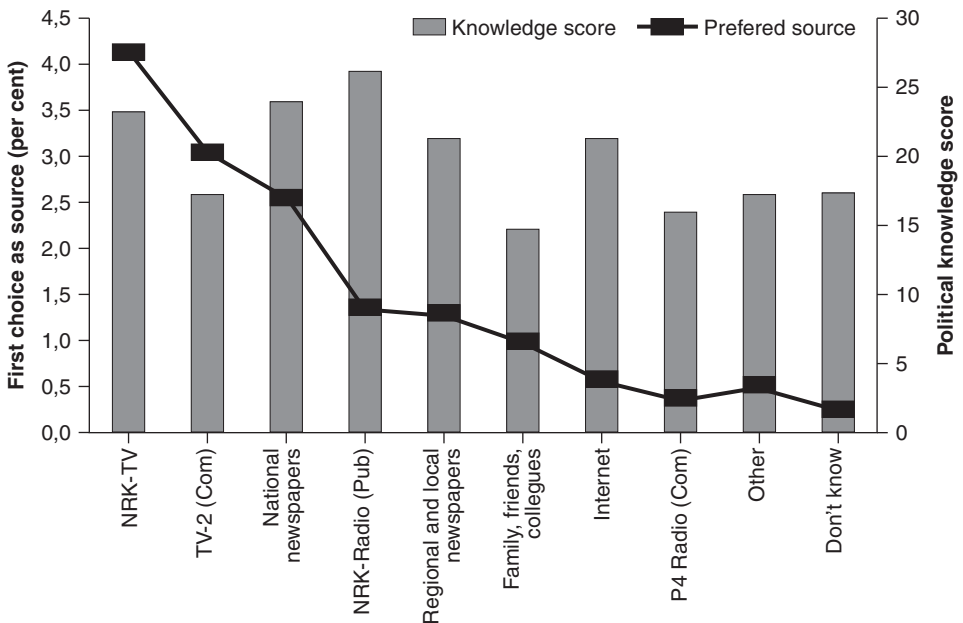
So far we have discussed TV and newspapers as dissimilar in important ways, but the distinction between informative and entertaining media does not necessarily coincide with the TV/newspaper distinction. In other words, the results presented above may indicate that most Norwegians do not make a distinction between TV and newspapers as a source of political information, but this does not rule out the possibility that the audience is stratified by level of political knowledge.

Figure 1 displays the most favoured source of information on the 2001 election and election campaign (in descending order) and the average level of political knowledge within each audience group.³ If the “inverse law” is correct, the level of political knowledge should *increase* as the size of the audience *decreases* (to the right hand side).

Education and previous ability to identify the Centre Party's position relative to the other parties are – by far – the best predictors. The considerable effect of education suggests that the knowledge gap is widening. The ability to position the Centre Party correctly has improved more among the highly educated than among the less educated. These findings are in line with the original knowledge gap hypothesis. Regarding newspapers and TV as important sources of information on the ongoing campaign are both positively associated with the dependent variable. However, only the effect of paying attention to the newspapers is of the magnitude necessary to reach statistical significance. The petty effects may be due to the use of proxy variables. Assessing newspapers as an important source of information does not necessarily mean reading them. The negative effect of the interaction term between assessing newspapers an important source of information and education does not reach statistical significance at the 5 per cent level (but at $p < 0.10$ it does). But in this case, a less restrictive confidence interval does not save the argument, as the effect is negative. If anything, the interaction of education and assessment of newspapers tends to close the knowledge gap.

Once more the effects of the control variables are statistically insignificant, with the exception of the negative effect of low political interest. Not surprisingly, the group least interested in politics is less likely than others to catch the latest developments in the political sphere. Once more, the utter insignificance of attachment to a political party is striking. The contribution of the control variables to the overall explanatory power of the model is modest. The variance explained (R^2) increases from 22 to 24 per cent.

Figure 1. *Most Important Source of Information on the 2001 Election and Average Political Knowledge Score within Audience Group*



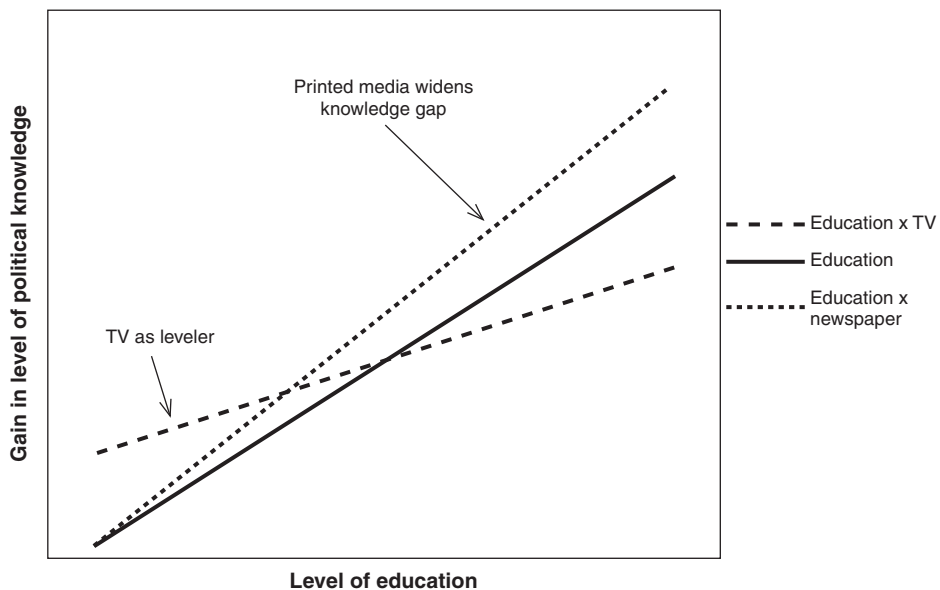
The results presented in Figure 1 challenge the “inverse law”. The most popular media do *not* attract the least politically knowledgeable audience. The Norwegian public broadcasting company, NRK TV, is the most popular source of political information

and the most popular generally (cf. Jenssen 2009, Karlsen 2009). The average political knowledge score among the NRK-TV audience is roughly equal to those preferring national newspapers as their primary source of political information. Those preferring public radio have the highest average score, but NRK radio is not the least popular source of information. The most striking result is that public television seems to attract a more politically knowledgeable audience than the commercial TV2, and that public radio – by an even wider margin – attracts a more sophisticated audience than does the commercial P4-radio. This does not mean that public broadcasting is better at educating its audience, but rather that public broadcasting is the choice of many politically knowledgeable individuals (Jenssen 2009). Previous studies suggest that media systems with strong PB traditions are more informative with regard to “hard news” than are media systems dominated by commercial broadcasting (Aalberg et al. 2008, Curran et al. forthcoming).

The Knowledge Gap Model

The regression model generally applied in much of the empirical research on knowledge gaps can be visualized as in Figure 2.

Figure 2. *The Knowledge Gap-hypothesis, the TV as Knowledge Leveler Argument and Papers as Knowledge Gap Widener Argument illustrated*



According to the general knowledge gap argument, people with a high level of education gain more knowledge than people with less education. In Figure 2, this effect is illustrated by the solid line. The steep slope suggests a substantial widening of knowledge differences resulting from education. The even steeper line (education x newspaper) suggests that if exposed to printed information, the knowledge gap between the most and least educated will widen even more, because the highly educated gain more information when exposed to newspapers. A positive and statistically significant regression

coefficient for this interaction would confirm this hypothesis. The gentler slope for the education x TV interaction suggests that TV exposure may reduce the knowledge gap effect. In this theoretical case, the knowledge gain among the highly educated is lower than the gain caused by education alone. In other words, they are unable to make full use of their educational advantage when exposed to TV information. Among the least educated, TV has a compensatory effect. A statistically significant negative effect for this interaction yields empirical support for the TV-as-leveller argument.

The two positions labelled “The superior printed media” and “TV as leveller” arguments are generally discussed as competing and even incompatible. Some researchers seem preoccupied with picking a “winner” – the media channel contributing most to the knowledge gain. We see no theoretical arguments that exclude the possibility that both arguments are valid. In a study from the Netherlands, which has a media system comparable to Norway’s, Kleinnijenhuis (1991) finds empirical support for both arguments.

What is “Political Knowledge” and How do we Model “Knowledge Gain”?

Measuring political knowledge is no easy task, and the contrast between the ambitious theoretical concepts and the indicators applied in most empirical research is often striking. Because the researchers want to discuss the consequences of political knowledge – or more precisely, the lack of knowledge – they tend to load their concepts with theoretical content to the limit. Concepts like “political literacy” (Westholm et al. 1990), “political awareness” (Zaller 1992) and “civic literacy” (Milner 2004) are nevertheless measured as the level of factual political knowledge. Level of factual political knowledge has also been used as an indicator of “political sophistication”, “political expertise” and “political involvement” (Deeli Carpini and Keeter 1993). Factual knowledge can be seen as the “building blocks” of “political literacy” (Westholm et al. 1990), and the level of factual knowledge “captures what has actually gotten into people’s minds” (Zaller 1992).

There are some good reasons for this practice. Researchers want to discern between knowledge and beliefs. Knowledge is defined as correct information. To discourage guessing, and because they fear that some respondents may feel embarrassed by a large number of knowledge questions, researchers prefer to use a small number of hard facts questions with good discriminatory power. Last but not least, researchers tend to focus on “lexical” knowledge rather than relevant but disputed information to ensure political impartiality. Political parties tend to disagree passionately over what information is most relevant to voters, and researchers try to stay out of the crossfire by focusing on the *least* controversial types of knowledge.

The problem of conceptual validity arises because researchers also want to focus on the political knowledge *that matters* for peoples’ political opinions, their party preferences and their willingness to take an active part in politics, etc. lexical knowledge – like the number of seats in the parliament or the name of the speaker – may be of little immediate relevance when people are deliberating over political topics. Moreover, this type of factual knowledge is *not* what the political parties try to convey to people. The parties focus on their issue positions, their historic performance, their capacity to form successful governing alliances, etc. The hard facts indicators are problematic for

another reason as well. The media rarely communicate what they consider “standard knowledge”. The typical news broadcast or news article focuses on the unexpected, the irregular, the erratic – not the taken for granted, the systematic and stable. They do not want to bore – or even worse – to insult their audience by repeating the obvious. The typical lexical knowledge question taps into what the journalists consider “standard knowledge”.

The knowledge gap hypothesis focuses on knowledge *gain*. The obvious test of knowledge gain would be to administer a questionnaire at time t_1 , and then later at t_2 , after exposure to stimuli, when the same questionnaire is presented to the same representative sample of the population. Indicators of political knowledge are rare in cross-sectional surveys and even harder to find in panel studies. The Norwegian election survey panels 1997-2001 and 2001-2005 include indicators of factual political knowledge in every interview. The questions are not identical, but they are similar in thematic focus (cf. appendix).

We will try to meet these methodological challenges by applying both an index based on traditional lexical knowledge indicators (Table 1), and an alternative more applied knowledge oriented indicator (Table 2) as dependent variables, and by focusing on new knowledge that could not have been obtained at the time of the first interview (Table 1) and knowledge that was made more evident at the time of the second interview both by the political development and increased media attention (Table 2). We will use measures of prior level of political knowledge obtained from the first interviews to account for the cumulative nature of political knowledge. According to the knowledge gap hypothesis, the well-informed are more likely to pick up, understand and store new information.

Three of the questions posed in 2001 focused on topics from the period leading up to the 2001 – election – knowledge that the respondents had no way of knowing when they were interviewed in 1997. These knowledge variables were combined into the cumulative index that serves as the dependent variable in the analysis presented in Table 1. An analogous index based on five factual knowledge questions in the 1997 survey (cf. appendix) serves as our “1997 level of political knowledge” measure.

All the key variables in the theoretical argument are included in the first step in the regression model: the prior level of political knowledge, the level of general education, exposure to news on the election campaign through TV and newspapers, respectively, and the two interaction terms representing the “superior printed media” and “TV as leveller” arguments. A significant *positive* effect of the education x newspaper exposure term will be in line with the theoretical argument, and a significant *negative* effect for the education x TV term will be in support of the TV-as-leveller argument.

In the second step, a set of control variables are included to check whether the effects in the prior steps may be spurious. One could argue, in line with the Michigan model (Miller et al. 1960), that political parties are important channels of political communication, and that the closer the attachment to a party, the greater the exposure to new political information. Knowledge gain can also be seen as a cumulative process over the lifespan. Older people have more experience and hence more political knowledge. However, this effect is not necessarily linear. The learning curve may be steeper in the formative years and when most people take up a profession and start a family. To take this into account, we have included age in the model as a set of dummy variables. Some studies have discussed a gender gap in political knowledge (cf. Mondak and Anderson 2004). We have no ambition to contribute to the debate over this finding, but have in-

cluded gender as an independent variable to avoid inflated estimates due to a misspecified regression model. And finally, knowledge gain may be the result of high political interest. The most politically engaged are better motivated, more aware, more likely to seek out new information and may consequently learn more.

Table 1. *Changing level of political knowledge by prior level of knowledge, level of education, media exposure, interaction of education and TV and newspaper exposure, controlled for alternative predictors (Norwegian 1997-2001 election survey panel)*

	Step 1		Step 2	
	B	β	B	β
Level of political knowledge '97	0,78 *	0,4	0,69 *	0,35
Education	0,10 *	0,06	0,09	0,05
TV-exposure	0,20 *	0,22	0,17 *	0,19
Newspaper-exposure	0,64 *	0,28	0,66 *	0,29
Education x newspaper preference	0,09 *	0,07	0,10 *	0,07
Education x TV preference	0,03	0,03	0,04	0,03
Party attachment '97			0,03	0,02
Age 26-33 ^a			0,18	0,03
Age 34-43			0,54	0,09
Age 44-53			0,46	0,07
Age 54-63			0,59	0,09
Age 64-73			0,53	0,07
Age 74+			0,6	0,06
Gender ^b			0,09	0,02
Very interested in politics ^c			-0,07	-0,01
Not interested in politics ^c			-0,52 *	-0,1
Constant	-1,53 *		-1,39 *	
R2 (N = 866)		0,44		0,45
F-change				2,16 *

* $p < 0,05$

^a The reference category is 22-25 years in 2001

^b Female is coded 0, male 1.

^c The reference category is "Somewhat interested".

The interaction variables were constructed by dichotomizing two variables representing media preference (first choice) being either TV or newspapers (national, regional or local) and multiplying by level of education.

Prior level of political knowledge is the strongest predictor of political knowledge gain. This is hardly surprising, and in accordance with the knowledge gap hypothesis. Several researchers have observed that most people's level of factual political knowledge is relatively stable over time (Westholm et al. 1996, Jennings 1996, Delli Carpini and Keeter 1996). The effect of education is smaller than expected, suggesting that the advantage of higher education is, in part, funnelled through prior level of political knowledge. Both exposure to news on the election campaign through TV and newspapers have a substantial positive effect on the level of new political knowledge. Exposure through newspapers has the stronger effect of the two. The "superior printed media" argument

is supported in this analysis, but the positive effect is rather small and reaches statistical significance by a narrow margin. The TV-as-leveller argument is not supported. The effect is – contrary to expectation – positive and it is not statistically significant.

These findings hold up when the control variables are introduced in Step 2. The explanatory power of the model is hardly improved at all. The utter insignificance of attachment to a political party is perhaps the most interesting result in the final step. The political parties seem to have lost their function as channels of direct political communication, at least with regard to factual information. A closer look at the variable reveals that the majority of respondents have no ties to the political parties whatsoever. The effect of prior level of political knowledge is somewhat reduced in the final step, but this must be interpreted as the result of indirect effects mainly via political interest rather than a sign of spuriousness. Neither age nor gender contribute to the acquisition of new political knowledge. Low political interest contributes significantly in the sense that it seems to suppress any motivation to gain knowledge.⁴

Bennet (1994) has demonstrated that all election campaigns are not equally informative. The campaign intensity varies and different political issues dominate the agenda. The learning curve is different for easy and complex issues (Moore 1987, Neman et al. 1992). The gap is more likely to widen when the issues are difficult. Nadeau et al. (2008) argue that the least knowledgeable are incapable of comprehending new political information, unless the information is simplified. The intensity (volume/time) of the media coverage matters as well (Nadeau et al. 2008, Zaller 1992). The implication of these arguments is, of course, that the results from the 2001 campaign may not be representative for the typical Norwegian election campaign. Unfortunately, we have only one alternative survey containing the necessary key variables, the 2001-2005 election survey panel. The 2005 campaign differed from the prior campaign in several ways. The intensity, as indicated by for instance turnout, was greater, and the well-known, long-established economic left-right issues characterized the campaign that was dominated by two credible competing government alternatives (Aardal et al. 2007). The 2001 campaign, in contrast, was less intense, voters were offered the choice between two weak minority governments, and it soon became clear that formation of the new Government would be the result of negotiations rather than the outcome of the election. In other words, the 2001 campaign was less intense, but the need for information among people was probably higher, due to the diffuse political situation. These differences suggest a greater probability for a widening knowledge gap in 2001 than in 2005.

Regrettably, only one of the traditional indicators of political knowledge in the 2005 questionnaire focused on new knowledge. Fortunately, the political development between 2001 and 2005 comes to our help. In the campaign leading up to the 2005 election, the Centre Party sided with the Labour Party and the Socialist Left Party to form the “red-green government alternative”. The party’s historic crossing of the “socialist-bourgeois divide” attracted a great deal of attention in the media⁵ and highlighted the Centre Party’s position relative to the other parties. It seems plausible that the increased focus on the Centre Party’s position in the mass media would increase the capacity of voters to accurately describe the Centre Party’s position relative to other parties on the left-right scale.⁶ Popular support for the Centre Party has oscillated between 5.5 and 8 per cent over the past four national elections. Hence, the number of people who take an active interest in the doings and destiny of the Centre Party is limited. However, the

role of the party in the formation of the new government alternative brought it to the forefront of the political stage.

In the 2005 interview, respondents were asked to position eight parties on the left-right scale. Our dependent variable in Table 2 is the sum of correct positions assigned to the Centre Party relative to the other parties.⁷ The model in Table 2 is similar to the model in Table 1, with two exceptions. The dependent variable is different and the measure of prior level of political knowledge is changed accordingly. The 2005 survey does not contain any direct measures of media exposure, so the importance assigned to TV and newspapers as sources on the election are used as proxies for exposure, assuming that people consume the media they consider important. This is far from ideal, but better than relying on indicators of media exposure from the first interview, conducted four years prior.

Table 2. *Ability to position the Centre Party relatively to other parties on the left/right scale in 2005 correctly by interaction of education and main source of campaign information and 2001 level of ability to position the Centre Party, controlled for alternative predictors. (Norwegian 2001-2005 election survey panel)*

	Step 1		Step 2	
	B	β	B	β
Ability to position Centre Party in 2001	0.41 *	0.30	0.36*	0.27
Education	0.40 *	0.30	0.39*	0.29
TV important source on campaign	0.08	0.05	0.07	0.04
Newspapers important source	0.13 *	0.15	0.10*	0.11
Education x newspaper important	-0.10	-0.08	-0.10	-0.09
Education x TV important	-0.06	-0.05	-0.06	-0.05
Party attachment '01			0.08	0.04
Age 26-33 ^a			0.01	0.00
Age 34-43			0.22	0.05
Age 44-53			0.25	0.05
Age 54-63			0.26	0.05
Age 64-73			-0.17	-0.03
Age 74+			-0.45	-0.03
Gender ^b			0.12	0.03
Very interested in politics ^c			0.21	0.03
Not interested in politics ^c			-0.48 *	-0.11
Constant	2.15 *		2.48 *	
R2 (N =756)		0.22		0.24

* $p < 0,05$

^a The reference category is 22-25 years in 2005

^b Female is coded 0, male 1.

^c The reference category is "Somewhat interested".

The interaction variables were constructed by dichotomizing the indicator of assessment of media importance (those assigning the highest level of importance coded 1, all others 0) before multiplying with level of education.

Education and previous ability to identify the Centre Party's position relative to the other parties are – by far – the best predictors. The considerable effect of education suggests

that the knowledge gap is widening. The ability to position the Centre Party correctly has improved more among the highly educated than among the less educated. These findings are in line with the original knowledge gap hypothesis. Regarding newspapers and TV as important sources of information on the ongoing campaign are both positively associated with the dependent variable. However, only the effect of paying attention to the newspapers is of the magnitude necessary to reach statistical significance. The petty effects may be due to the use of proxy variables. Assessing newspapers as an important source of information does not necessarily mean reading them. The negative effect of the interaction term between assessing newspapers an important source of information and education does not reach statistical significance at the 5 per cent level (but at $p < 0.10$ it does). But in this case, a less restrictive confidence interval does not save the argument, as the effect is negative. If anything, the interaction of education and assessment of newspapers tends to close the knowledge gap.

Once more the effects of the control variables are statistically insignificant, with the exception of the negative effect of low political interest. Not surprisingly, the group least interested in politics is less likely than others to catch the latest developments in the political sphere. Once more, the utter insignificance of attachment to a political party is striking. The contribution of the control variables to the overall explanatory power of the model is modest. The variance explained (R^2) increases from 22 to 24 per cent.

Highbrow PB TV?

According to Milner (2002), Norway and several other countries belonging to Hallin and Mancini's "Democratic Corporatist" category are characterized by low "TV dependency" scores: the ratio between time spent watching TV and newspaper circulation is low. The low TV dependency is linked to a high level of "civic literacy", "knowledge required for effective political choice" (Milner 2002, 55). Milner's findings are interesting, but the empirical results presented by her suggest that the distinction between highbrow newspapers and lowbrow TV may be more valid in liberal media systems than in Norway. High newspaper circulation is one characteristic of the Democratic Corporatist systems, but so is the high level of journalistic professionalism across different media, and the strong tradition of public broadcasting sets a standard even for commercial broadcasting.⁸ For the same reasons, we must conclude that Newman's (1996) "inverse law" does not apply to the Norwegian case. Political debate and current affairs programmes are not banished to the marginal media.

The results presented here substantiate the presence of a political knowledge gap. The better educated and better informed are more likely to acquire new political knowledge than others are. The political efforts to close the gap through public broadcasting seem to have been unsuccessful so far, despite the fact that NRK-TV attracts a large and above average knowledgeable audience. On the contrary, when TV exposure has a significant effect, it is positive, i.e. it tends to widen rather than close the knowledge gap. Persistent knowledge gaps have also been observed in other countries with strong PB traditions (Curren et al. forthcoming). Exposure to newspapers and regarding newspapers as important sources of information on the election campaign boost the knowledge significantly. The effect of newspaper reading also seems to enhance the effect of education, at least in some situations. TV exposure fails to close the knowledge gap caused by education.

There are several possible explanations for this. The results in Figure 1 suggest that PB-TV and commercial TV should be discussed separately, and that the public broadcasting company NRK may fail to shrink the knowledge gap because it is the preferred TV channel among the *above* average knowledgeable. A recent study by Jarit (2009) suggests that frequent use of expert commentary – a common practice in the NRK – tends to widen the knowledge gap because the educated are more capable of interpreting the experts. An experimental study by Iyengar et al. (2004) suggests that “horse race journalism” – a characteristic of the NRK-TV campaign coverage – attracts the more politically interested and ideologically dedicated. Hagen (1992) observed that the content of the NRK primetime news broadcast was too complex for many in the audience, but they nevertheless kept watching out of a sense of duty to stay informed.⁹ This may explain to some degree why NRK has been able to keep a large share of the audience.

The popularity of public broadcasting TV makes it misleading to describe NRK-TV as an elitist, highbrow media channel, but it would be equally misleading to claim that NRK-TV reaches out to the least politically informed members of society. The findings suggest that public broadcasting may help to raise the average level of political knowledge in the population, but this does not necessarily lead to a closing of the knowledge gap.

Notes

1. This ambition was expressed, for instance, in the White Paper on *Mass media and Media policy* NOU 1983: 3: Massemedier og mediepolitikk. (cf. Skogerbø 1997: 181-3). In the current guidelines (“NRK-plakaten”) for NRK issued by the Ministry of Culture and Church Affairs (St. meld. nr. 6, 2007–2008, enacted by parliament March 14, 2008), the ambition to enlighten the whole population to the level necessary for participation in the political processes is highlighted as one of the key goals (paragraph 1b). In the 1960s, economic and technical considerations were important as well. In the Norwegian case, the cost of the technical infrastructure and the ambition to reach everyone in the sparsely populated countryside was important.
2. Cf. Statistics Norway: http://www.ssb.no/english/subjects/00/norge_en/media_en.pdf.
3. Cf. appendix for indicators used to build the Political knowledge index applied here.
4. Several researchers have observed that a high level of motivation compensates for lack of higher education and prior knowledge (e.g. Genova and Greenberg 1979, Neuman et al. 1992, Kwak 1999, McCann and Lawson 2006).
5. The Red-Green government was also described as a historic event in the media, because it was the first time the Socialist Left joined forces with the Labour Party. This made it likely that Norway could have a majority government for the first time since 1985.
6. Due to an error in the CATI programming in the 2001 survey, we have no way of accurately calculating the absolute improvement.
7. A full score of 7 is achieved if the Red Electoral Alliance, the Socialist Left Party and the Labour Party are positioned to the left of the Centre Party and the Christian Democratic Party, The Liberals, The Conservatives, and the Progress party are placed to the right of the Centre Party.
8. The Swedish media system is quite similar to the Norwegian. In an elaborate comparison of the media content in various Swedish media, Asp (2007) finds that the Swedish public broadcaster TV (Sveriges Television) is better than the best metropolitan newspaper with regard to density of information, on a par with regard to information breadth (number of pro and con arguments presented), but less informative with regard to information depth (background information). Asp’s findings may well illustrate one key aspect of the democratic corporatist media systems.
9. Hagen (1992) also points out that at the time of her study the lack of alternative TV channels made the choice easy: You either watched the TV-news from the NRK, or you did not.

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Appendix

Precise wording of the knowledge questions in the 1997 interviews:

"Do you happen to know the name of the leader of the Christian People's Party?"

"Do you remember the name of the Minister of regional affairs during the year leading up to the election?"

"Do you know which of the following parties have not been represented in the Storting during the last term? (1) The Red Electoral Alliance, (2) The Norwegian Communist Party, (3) The Progress Party.

"To which party did the last Speaker belong?"

"How many seats are there in the Storting"

An additive index based on these five items is included in an independent variable in Table 1 labelled: Level of political knowledge '97.

Wording of the knowledge questions in the 2001 interviews:

"Do you happen to know which parties participated in the Bondevik Government from 1997 until 2000?"

"Do you remember the name of the Minister of the regions in the last year before the election?"

"Who has been Speaker in the Storting the past four years?"

"The Storting is divided into two chambers when it deals with legislative issues. What are the names of these two chambers?"

An additive index: Political knowledge '01 was constructed on the basis of the first three items and serves as the dependent variable in Table 1. All four items were used in the knowledge index in Figure 1.

The wording of the questions on left-right party placement is as follows:

"From time to time there is talk about the left and the right. Where would you position the parties on a scale from 0 to 10 where 0 means the left and 10 means the right? We begin with ..(name of party)".

The variable "Party attachment" is a combination of two variables: strength of party identification and party membership. Party members are coded as one step (value) closer to a party than are those merely stating "strong" party identification.