Widening or closing the knowledge gap?
The role of different media in changing the distribution of political knowledge

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“Information society” has become the catchword describing one important aspect of the present society. More people work with producing, distribution and processing information than ever before. Knowledge is often seen as the engine in innovation processes and social change. Much of the production and distribution of new knowledge is confined to closed groups of specialists. In many cases this creates no problem. Most people do not plan a career as rocket scientists. However, when it comes to political knowledge we are all supposed to be experts of sorts. Few citizens take part in the production of political information, but most receive and process some political information during times of elections. The development of electronic media have clearly enhanced the capacity to distribute information to all strands of society, but so fare the political knowledge gap persists, and according to some researchers, the differences between TV and newspapers causes 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 audience 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 media channels, especially printed media. Prior empirical research from Norway has supported this argument (Torvik 1972), but the present empirical analysis, based on the 1997-2001 and 2001-2005 election study panels, do not. Neither exposure to political information through newspapers nor TV seems to close the knowledge gap related to education differences. Some possible interpretations of these findings 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 p.159-60): As the infusion of mass media information into a social system increases, segments of the population with higher socioeconomic status tend to acquire this information at a faster rate than the lower status segments, so that the gap in knowledge between these segments tends to increase rather than decrease. In the following discussion of the argument, it soon becomes clear that concept “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 (Tichenor et al. 1970 p.162):

- Formal education enhance 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 the relevant topics (new information) in their milieu.

- Higher education motivates people to pay attention to the news. The phenomenon “selective exposure” is linked to education through motivation.¹

- 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

Although education is initially described as an indicator of social status, much of the discussion is focused on the impact of education as such.

The comprehensive review of the knowledge gap literature by Viswanath and Finnegan (1996) demonstrated that all these second order hypotheses discussed by Tichenor et. al. have initialized subfields of research. The knowledge-gap literature has become even more fragmented by the type of information under consideration. Some studies focus on topics of great general interest like health and nutrition, some on general news and quite a few on the distribution of political information. The present study focuses on the role of the media in distributing political knowledge and hence the width of the knowledge gap.

Most of the studies originate from what Hallin and Mancini (2004) call the “liberal” or “North Atlantic” media systems. Studies from the “Democratic Corporative” media systems of Northern Europe are few and fare between. Although Hallin and Mancini seem convinced that a process of media system convergence is taking place, the differences are nevertheless still evident and justifies a closer look on the knowledge gap argument in a North European context. After all, the strong public broadcasting systems in these countries were set up with the ambition - among other things - to close the knowledge gaps in the populations.²

The époque of the party press is definitely over in Norway (Østbye 1997, Bjørklund 1991) and the printed mass media has been superseded by TV. In the 1980’s the average Norwegian spent twice as much time watching TV as reading. And this trend in media consumption has continued since.³ Newspaper circulation has nevertheless remained high.
The introduction of commercial television led to a rapid expansion of the supply of TV and increase in TV consumption. However, Public Broadcasting has remained strong and the leading commercial channel has not ignored news broadcasts and political journalism. On the contrary, they have 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). 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 political debates pr. 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 higher. In addition, a number of documentaries, special reports on Foreign affairs etc. are offered. In a comparative perspective, Norwegian viewers with an interest in politics will find something to watch every evening. 21 hours and 30 minutes of news and current affairs programs are offered in prime time pr week. Unlike many other countries with “democratic corporative” media systems, the private channels contribute substantially (Aalberg et.al. 2007).

The anticipated advantage of the printed media and TV as the great leveler-argument
The superiority of the printed media with regard to communicating political information has more ore less been taken for granted. The associative link between knowledge and printed media is strong for obvious historical reasons. Books have been both the tool and symbol of higher education. Scholars are still now and then called “book-learned”. Printed media has been the form of communication for social elites, including the political elites. The mass parties organized in the first part of the twentieth century, set up newspapers to spread their worldviews, and becoming a journalist was often the first significant step in a political career. In the research literature, the supposed superiority of newspapers is explained in different ways (ref.). TV can not compete with newspapers when it comes to share information volume. It is simply more to be learnt from newspapers. The format of newspapers makes it possible for the reader to skip everything unimportant, so the search for relevant information is time-effective. The greater volume makes it possible for journalists to go into greater detail, to give 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
If the news media keep on spreading the same information repeatedly over some time, one would expect the information to trickle down and finally be picked up by everybody but the most socially isolated. However, since the news agenda shifts rapidly, the knowledge gap seldom closes before new information is introduced, according to Tichenor et al. (1970). This argument leads to a rather pessimistic view on the chances of ever closing the knowledge gap. However, in the concluding section of their seminal article they 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 leveler" in some areas.* (Tichenor et al. 1970 p.170)

The idea of the “inadvertent audience” can be linked to the knowledge-leveler argument. According to Robinson (1976: 426) “The inadvertent audience” is the part of the TV audience that “fall into the news”. This audience within the audience is not primarily interested in news, but sits through news programs because they take an interest in the programs presiding or succeeding the news. This audience is unlikely to read much about politics in the newspapers, they have on average 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. Further, Neuman (1986) 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.” (Neuman 1986:140). He argues that 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. However, the inadvertent audience may be shrinking. Prior (2005) 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 that prefer entertainment over news are less likely to “fall in to the news” than before.

The power of TV is not just a consequence of its wider reach. TV is more capable of breaking the attention barrier than printed media. TV is “stronger” than printed media and radio because it blends audio and visual stimuli. The combination of sound, motion and
colour command attention in a way that printed media do not (McLuhan 1964). McLuhan’s truism: “The media is the message” may be an exaggeration, but Neuman et.al. rapport that the audience find TV more attention grabbing, more emotional, more surprising and more vivid than newspapers and magazines covering the same stories (Neuman et. al. 1992, table 3.5). In short TV is seen as the more attractive medium by most people. And because TV is seen as more entertaining, the audience pays more attention and (unintentionally) learn more. 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”. Unfortunately Neuman et. al. fail to report Salamon’s empirical findings. From his experimental study, Salamon concludes that the pupils under study learnt less from TV than from printed material because they regarded TV as easy and consequently spent less cognitive energy, resulting is a “shallow” learning process. Bennet (2001:232) argues along the same lines when he states 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”. Similar critiques of the content of modern media in general and TV in particular are numerous. Some (e. g. Norris 2000, Newton 1999) have described them as the theories of “media malaise”.

According to the review by Viswanth and Finnegan (1996) the empirical support for the hypothesis that exposure to printed media tend to increase the knowledge gap, is firm. Of the nine reviewed studies seven find empirical support for this argument. All of the five studies that compare the effects of newspapers versus television find stronger effects of exposure to newspapers. The results from the studies of the impact of TV exposure are mixed. A majority finds a narrowing gap or an absence of gap.6 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”.

The empirical model
The regression model generally applied in much of the empirical research on knowledge gap can be visualized as in figure 1.
According to the general knowledge gap argument, people with high level of education gain more knowledge than people with less education. In figure 1 this effect is illustrated by the solid line. The steep slope suggests a substantial widening of the knowledge differences caused by 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 even more information when exposed to newspapers. A positive and statistically significant regression coefficient for this interaction will confirm this hypothesis. The gentler slope for the education x TV interaction suggests that TV-exposure may reduce the knowledge gap effect. In this imagined 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 educate, TV has a compensatory effect. A statistically significant negative effect for this interaction yield empirical support to the TV as leveller argument.

The two positions, which we have 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.

Methods:
The knowledge gap hypothesis discusses the causes of changing level of knowledge. 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 across interviews, but they are similar in thematic focus and format (c.f. appendix). Hence, change in level of knowledge is measured as change in knowledge level relative to other respondents.7

Measuring political knowledge is no easy task, and the contrast between the ambitious theoretical concepts and the indicators applied in the empirical research is often striking. Because the researchers want to discuss the consequences of political knowledge – or more accurately, 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 level of factual political knowledge. Moreover, level of factual political knowledge has also been used as indicators of “political sophistication”, “political expertise” and “political involvement” (Deeli Carpini and Keeter 1993). There are several good reasons for this practice. Researchers want to discern between knowledge and beliefs. Knowledge is correct information. Because researchers fear that some respondents might feel embarrassed by a large number of knowledge-questions, they prefer to use a small number of questions with good discriminatory power, discouraging guessing. Last but not least, researchers tend to focus on “lexical” knowledge rather than relevant but disputed information to ensure impartiality. Political parties tend to disagree passionately over what information is of most relevance to voters, and researchers try to stay out of the crossfire.

The problem arises because we want to focus on the political knowledge that matters for peoples’ political opinions, their party preferences and their willingness to take active part in politics. Lexical knowledge – like the number of seats in the parliament or the name of the speaker – may be of little immediate relevance when people decide which party they are going to vote. Moreover, this type of factual knowledge is not what the political parties try to convey to people during election campaigns. It is hardly surprising, that several researchers
have observed that a person’s level of factual political knowledge is relatively stable over time (Westholm et al. 1996, Jennings 1996, Delli Carpini and Keeter 1996). The indicators applied in this study must be regarded proxy variables. The factual knowledge can be seen as the “building blocks” of “political literacy” (Westholm et al. 1990), and the level of factual knowledge “capture what has actually gotten into people’s minds” (Zaller 1992). The use of proxy variables is rarely an optimal solution, but it is a practical solution, and in this case, the only possible solution due to the lack of alternative data. Some empirical findings may also bolster this practice. Delli Carpina and Keeter (1996) found that political knowledge is relatively one-dimensional across domains like “rules of the game”, politicians and parties and “the substance of politics”. Jenssen (forthcomming) has demonstrated strong correlations between an index based on the factual political knowledge indicators applied in this study and an alternative, more campaign oriented, knowledge-index based on the respondents’ ability to rank the main political parties correctly on the left-right scale. The use of “textbook” questions will nevertheless favour education as an explanatory variable, whereas knowledge questions related to particular policies, issue positions etc, are likely to be more sensitive to the “information environment”, i.e. media use (Jerit et al. 2006).

Analysis:
In the first step only two independent variables are introduced. Prior political knowledge is introduced not to prove the obvious, that level of political knowledge is relatively stable over time, but to model change in political knowledge. Hence, a significant positive effect of education on level of political knowledge controlling for prior level of knowledge, indicates that education widens the knowledge gap. In the second step, the interaction variables are introduced. In the final 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 information, and that the closers 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. And finally, knowledge gain may be the result of political interest. The most politically engaged are more aware, and consequently learn more.
### Table 1.
Changing level of political knowledge by interaction of education and main source of campaign information controlled for alternative predictors.
(Norwegian 1997-2001 election survey panel)

<table>
<thead>
<tr>
<th></th>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>β</td>
<td>B</td>
</tr>
<tr>
<td>Level of political knowledge '97</td>
<td>0.83*</td>
<td>0.51</td>
<td>0.81*</td>
</tr>
<tr>
<td>Education</td>
<td>0.21*</td>
<td>0.15</td>
<td>0.09*</td>
</tr>
<tr>
<td>Education x newspaper</td>
<td>0.22*</td>
<td>0.19</td>
<td>0.21*</td>
</tr>
<tr>
<td>Education x TV</td>
<td>0.17*</td>
<td>0.17</td>
<td>0.16*</td>
</tr>
<tr>
<td>Party attachment '97</td>
<td></td>
<td></td>
<td>0.02</td>
</tr>
<tr>
<td>Age (decades)</td>
<td></td>
<td></td>
<td>0.02*</td>
</tr>
<tr>
<td>Very interested in politics</td>
<td></td>
<td></td>
<td>0.31</td>
</tr>
<tr>
<td>Not interested in politics</td>
<td></td>
<td></td>
<td>-0.56*</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.36</td>
<td>-0.29</td>
<td></td>
</tr>
<tr>
<td>R² (N = 866)</td>
<td>0.32</td>
<td>0.35</td>
<td>0.39</td>
</tr>
<tr>
<td>F-change</td>
<td>25.5*</td>
<td>12.1*</td>
<td></td>
</tr>
<tr>
<td>* p &lt; 0.05</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Prior level of political knowledge is, as expected, the strongest predictor of present level of political knowledge. The remaining variance in the dependent variable represents the change in political knowledge we seek to explain. The positive, statistically significant effect of education is in line with the general knowledge gap argument: the knowledge gap tends to widen because the better educated gain more new knowledge then the less educated. This finding holds up when more variables are introduced (step 2 and 3) and in both panels (c.f. table 2). Media exposure does enhance the effect of education. Both interaction terms yield significant positive effects. Moreover, the explanatory power of the model is significantly improved. The positive effect of the interaction between education and TV contradicts the “TV as leveller” argument. TV exposure seems to enhance the effect of education to the same extent as newspaper reading. The two coefficients are of the same magnitude.

Age contributes positively whereas absence of political interest contributes negatively to change in level of political knowledge. 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 (via political interest and social age) rather than a sign of spuriousness.

Prior research has demonstrated that all election campaigns are not equally informative (Bennet 1994). 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 knowledge 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 if it were to reach them, unless the information is simplistic. The intensity (volume/time) of the media coverage matters as well (Nadeau et.al. 2008, Zaller 1992). The knowledge gain is greatest among those with medium high political awareness when the coverage is of medium intensity. Low or high intensity coverage campaigns are less likely to increase the knowledge gap. The implication of these arguments is, of course, that the results from the 2001 campaign, presented in table 1, 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 the higher 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. 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 three indicators of political knowledge were included in the 2005 questionnaire. Moreover, respondents were asked to rate the importance of various sources of information on the election, rather then to rank them. These two question formats yield very different information, and ranking the sources is closer to the theoretical argument, describing newspapers and TV as very different media with distinctive audiences. The regressions reported in table 2 were run with the rating format indicators of media importance from 2005 and the ranking of sources obtained in 2001 alternatively (results not displayed). The results were almost identical.

Using the 2001-2005 panel opens one new opportunity. It has been argued that difference in individual motivation is a key factor in any explanation of the knowledge gap. Several researchers have observed that a high level of motivation compensate for lack of higher education and lack of prior knowledge (i.e. Genova and Greenberg 1979, Neuman et.al. 1992, Kwak 1999, McCann & Lawson 2006). Individual motivation is important both in its own right and because it interacts positively with education, i.e. that the more educated are
also better motivated for information searching. In other words, people do not learn much from being “exposed” to the media, they have to be motivated to pay attention.

The descriptions of what lies behind individual motivation are diverse. Some argue that motivation is an expression of utility-optimizing; some argue that motivation has to do with general awareness, issue specific awareness or issue involvement. Others see motivation as the result of schematic thinking or other predispositions, making people more aware of political themes in the news. The available indicator of motivation does not allow for much speculation along these lines. It is based on a single question about the media campaign awareness: “How well did you follow the election campaign in the media?”11 It measures to what extent the respondents did monitor the media campaign, not why they paid attention.

We set out with the basic knowledge gap model, including only prior level of political knowledge and education as independent variables. The next step is to introduce the two-way interaction terms and control variables, similar to the final step in table 1.

A three-way interaction between education, preferred media source and media campaign awareness is introduced in the final step in table 2. To avoid multicollinearity the two way interaction terms were omitted from this model. The argument is that awareness is a necessary precondition for any knowledge gain, and that the stronger awareness, the higher probability of learning from the preferred media. To assess the model improvement, the results from the model with two-way interaction are included in table 2 as well.

Table 2.
Changing level of political knowledge by interaction of education, main source of campaign information and awareness controlled for alternative predictors. (Norwegian 2001-2005 election survey panel)

<table>
<thead>
<tr>
<th></th>
<th>Basic knowledge gap model</th>
<th>Two-way interaction</th>
<th>Three-way interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>β</td>
<td>B</td>
</tr>
<tr>
<td>Level of political knowledge '01</td>
<td>0,23*</td>
<td>0,39</td>
<td>0,21*</td>
</tr>
<tr>
<td>Education</td>
<td>0,16*</td>
<td>0,20</td>
<td>0,13*</td>
</tr>
<tr>
<td>Education x newspaper</td>
<td>-0,01</td>
<td></td>
<td>-0,01</td>
</tr>
<tr>
<td>Education x TV</td>
<td>-0,02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education x newspaper x awareness</td>
<td></td>
<td></td>
<td>0,01</td>
</tr>
<tr>
<td>Education x TV x awareness</td>
<td></td>
<td></td>
<td>0,02</td>
</tr>
</tbody>
</table>


The two-way interaction model yields insignificant coefficients for the two interaction terms but otherwise similar results to those presented in table 1. The results for the basic model confirms the existence of a widening knowledge gap linked to education, but the widening of the knowledge gap seems to be unrelated to preferred media source.

Including media campaign awareness does not increase the model’s explanatory power at all, although media campaign awareness is significantly associated with political knowledge ($r_{xy}=0.22$). The three-way interaction terms does not yield significant coefficients.

The insignificance of news awareness may have a methodological explanation. Price and Zaller (1993) have argued that variables like self-reported awareness have little explanatory power with regard to “who get the news”, simply because it taps level of exposure rather than the internalization of information. Moreover, they argue, awareness reflects prior level of political knowledge and may have little unique explanatory power.

So what has been learnt so fare? The original knowledge gap hypothesis is supported: the highly educated seem to gain more political knowledge during election campaigns than the less educated. However, the role of the media seems mixed. The TV as leveller – argument was not supported. On the contrary, newspapers and TV seem to go hand in hand: either they both enhance the effect of education (2001), or they are both insignificant (2005). This observation begs a question: Is it possible that the assumptions about highbrow newspapers and lowbrow TV underlying much of the research in this field, simply does not fit the Norwegian case?

**Readers and viewers: Two distinctive audiences when it comes to politics?**

Much of the discussion on types of media consumption rests on the assumption that we can identify two distinct audience groups, the newspaper readers and the TV-viewers. Through the use of interview questions applying ranking format, the researcher can always make
people members of one of these two audiences. Few respondents will insist on the two media being of the exact same “importance” to them or that they spend exactly the same time consuming newspaper and TV. In real life, the numbers of people that fit these two “pure” analytic categories, i.e. that rarely watch TV or never read a newspaper, is likely to be small. The high newspaper circulation in Norway and the TV-ratings suggest that most people belong to both categories. According to Statistics Norway 72 percent of the population 9-79 years read at least one newspaper on an average day. 68 percent of the population 12-79 years watch TV on an ordinary day. However, when it comes to media-coverage of politics in general and elections in particular, the pattern may be another since the number of people with a firm political interest and awareness is limited. According to the election surveys (Aardal ed. 2007), approximately 15 percent of the adult population report being “very interested” in politics. Although the number of people paying attention, especially before elections, is much higher, the political aware audience may have other media habits than the general population. To assess this question, we have submitted at series of questions on the importance of various information sources on the 2005 election campaign to factor analysis. If the variables representing the importance assigned to TV and to newspapers end up in different factors or in the same factor but with different signs, it indicates a segmentation of the political audience. The results are presented in table 3.

<table>
<thead>
<tr>
<th>Importance of newspapers on the Internet</th>
<th>First Factor</th>
<th>Second Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Importance of national newspapers</td>
<td>0,70</td>
<td>-</td>
</tr>
<tr>
<td>Importance of regional newspapers</td>
<td>0,54</td>
<td>-</td>
</tr>
<tr>
<td>Importance of TV</td>
<td>0,65</td>
<td>-</td>
</tr>
<tr>
<td>Importance of Radio</td>
<td>0,52</td>
<td>-</td>
</tr>
<tr>
<td>Important of the Internet (excl. Internet versions of newspapers)</td>
<td>-</td>
<td>0,80</td>
</tr>
<tr>
<td>Importance of family and friends</td>
<td>0,65</td>
<td>-</td>
</tr>
<tr>
<td>Eigenvalue</td>
<td>1,99</td>
<td>1,55</td>
</tr>
<tr>
<td>Per cent of total variance</td>
<td>28</td>
<td>22</td>
</tr>
</tbody>
</table>

The substantial factor loadings conceal several feeble correlations, but this does not change the main conclusion: either people tend to hold most media channels important, or they see no
one important. The bivariate correlation between importance ascribed to TV and national newspapers is 0.30 (Pearson’s r) and both variables load on the same factor with strong factor loadings. People that do find TV an important source of political information, are also likely to ascribe high importance to the national newspapers. The result suggests that most Norwegian do not draw a sharp distinction between TV and newspapers as sources of political information.

The analysis yield two factors, but nothing suggests that the two-factor solution has anything to do the difference between TV and newspapers audiences. The second factor is caused by the “intense minority” who find the Internet to be of fare greater importance than most people do. The correlation between the two questions related to the importance of the Internet as a source of political information, is 0.50 (rxy). The overall impression is that we have one large audience exposed to political information both from TV and newspapers, and a much smaller audience linked to Internet use. Only 5 and 10 per cent rate Internet and internet editions of newspapers “very important”, respectively. TV is the preferred medium for information on the election and election campaign by a wide margin. Nearly one out of two prefer TV over all other media. The national newspapers are the preferred source for 17 per cent, when it comes to information on the election (c.f. figure 2).

An audience stratified by level of political interest and political knowledge?
A pessimistic view of media use and knowledge gap holds that most 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 they, for some reason, tried to find it. Many researchers argue that any information campaign must have a certain intensity and duration to succeed (c.f. More 1987, Zaller 1992; 2003, Nadeau et. al. 2008). However, even an intense and long-lasting media campaign may be insufficient. 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 habitudinal exposed to. Even increased awareness will 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 programs are available the large audiences will escape more demanding programs like, political commentary and debate. Eventually, the analytical, in depth political information will only be fond 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. As the politically knowledgeable are a minority, the media directed towards, and preferred by them, are likely to be media with a limited audience.

The implication of the “inverse law” is of course that people do not “fall into the news”, the “inadvertent audience” does not exist. The knowledge gap will inevitability widen, and only extraordinary circumstances will close the gap. The captivating logic of the “inverse law” makes it easy to forget its basic premise: that media habits is structured mainly by level of political interest. One could argue that only two groups, the most politically interested on one hand and the politically alienated and people with strong anti-political sentiments on the other, will adjust their media habits to fit their orientation towards politics. But the middle majority is more likely to develop media habits based on a mix 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 media content than individuals’ orientations toward politics.

So far we have discussed TV and newspapers as opposite extremes, but the distinction between informative and entertaining media does not necessarily coincide with the TV/newspaper distinction. In other words, the results presented in table 3 may indicate that most Norwegian do not draw a distinction between TV and newspapers as sources of political information, but it does not rule out the possibility that the audience is stratified by level of political knowledge, nevertheless.

Figure 2 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. If the “inverse law” is correct, the level of political knowledge should increase as the size of the audience decrease (to the right hand side).
The results presented in figure 2 contradict the “inverse law”. The most popular media do not attract the least politically knowledgeable audience. The public broadcasting NRK-TV is the most popular source of political information (and the most popular generally) and the average political knowledge score among its audience is on level with those preferring national newspapers as their primary source of political information. Those preferring public radio have the highest political knowledge score, but NRK-radio is not the least popular source of information. The most striking result in figure 2 is that public television seems to attract a more politically knowledgeable audience than the commercial TV-2, and that public radio – with an even wider margin – attracts a more politically sophisticated audience than the commercial P4-radio. This does not mean that public broadcasting is better at educating its audience, but it indicates that public broadcasting is the choice of many politically interested and knowledgeable (Jenssen forthcoming). Previous studies suggest that media systems with
strong PB-traditions are more informative with regard to “hard news” than media systems dominated by commercial broadcasting (Aalberg et al. 2008, Curran et. al. forthcoming).

A new regression model (results shown in appendix) based on an ex post facto coding of the media preference variable in line with the findings in figure 2, tells an interesting story. When the various media are ranked according to the average knowledge level of its audience, media consumption stands out as a very important intervening variable, but the explanatory power of the model is only marginally increased from \( R^2 = 0.37 \) to 0.38 (F-change: 21.03, \( p < 0.05 \)). The result suggests that media habits may well be one of the key factors behind the persistent knowledge gap, but the marginal improvement of the model’s explanatory power, suggests that media exposure has only marginal impact when it comes to changing the level of factual political knowledge.

Conclusion
In one sense the analysis presented here is inconclusive. Media consumption may or may not widen the political knowledge gap. The results suggest that exposure to both the TV and newspaper coverage of the 2001-election enhanced the level of factual political knowledge, whereas neither had an impact in 2005. The 2005 election campaign was a forceful battle between the incumbent minority coalition and a well defined opposition block over well known issues linked to the left-right ideological dimension. The 2001 election campaign, on the other hand, was a confrontation between a shaky minority government and a small and incoherent opposition block that looked less credible day by day. One might argue that media played a more important role in 2001 because the public was in a state of disarray. People had to turn to the media to assess all the possible government alternatives and the policy implications. With only two cases, we should refrain from driving this speculation too far. We must also bear in mind that the margin between statistically significant and insignificant coefficients for interaction variables are often small, as in this case.

The TV as leveler-argument is neither supported in the analysis of the 1997-2001 nor the 2001-2005 data. The results in figure 2 suggest that PB-TV and commercial TV should be discussed separately, and that the public broadcasting NRK may fail to close the knowledge gap because it is the preferred TV channel among the above average knowledgeable. Solely the popularity of public broadcasting 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 well-informed members of society. 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 between groups within the population. Persistent knowledge gaps have also been observed in other countries with strong PB-traditions (Curren et al. forthcoming).

According to Milner Norway and several other countries belonging to Hallin and Mancini’s “Democratic Corporatist” category are characterized by a low “TV-dependency” scores: the ration 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 empirical findings are interesting but the empirical results presented her, suggest that the distinction between highbrow newspapers and lowbrow TV may be more valid in liberal media systems than in the democratic corporatist systems. High newspaper circulation is one characteristic of the latter systems, but so is high level of journalistic professionalism across different media and a strong tradition of public broadcasting and state regulation, even in commercial broadcasting. In his 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 par with regard to information breadth (number of pro and con-arguments presented) of information 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.
References:


Curran, James, Shanto Iyengar, Anker Brink Lund and Inka Solovaara-Moring (forthcoming): media systems, political knowledge and democracy: A comparative study.


Miller et. al. (1960): *The American voter*.


Appendix

Precise wording of the knowledge questions in the 1997 interviews:
“Do you happen to know the name of the leader of the Christian Peoples’ 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 that 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.
“Which party did the last Speaker belong?”
“How many seats are there in the Storting?”

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?”
“What 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 last four years?”
“The Storting is divided into two chambers when it deals with legislative issues. What are the names of these two chambers?”

Precise wording of the knowledge questions in 2005:
“Do you happen to know how many MPs there are in the Storting now after the election?”
“Do you remember the name of the Minister of Modernization in the year leading up to the election?”
“Six national referendums have been held in this country. Do you happen to remember when the last one took place and what it was about?”

Table A1.

<table>
<thead>
<tr>
<th>Level of general political knowledge in 2001 explained by previous level of political knowledge, interaction of previous knowledge and media consumption, and alternative predictors.</th>
<th>Norwegian 1997-2001 election survey panel.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Step 1</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Political knowledge ’97</td>
<td>0,90*</td>
</tr>
<tr>
<td>Pol. kn. ’97 X media consumption ’01a</td>
<td>0,15*</td>
</tr>
<tr>
<td>Level of education</td>
<td>0,22*</td>
</tr>
<tr>
<td>Party attachment ’97 (0-4 scale)</td>
<td>0,00</td>
</tr>
<tr>
<td>Age</td>
<td>0,01*</td>
</tr>
<tr>
<td>Very interested in politics ’97 (dummy)</td>
<td>0,32</td>
</tr>
<tr>
<td>Not interested in politics ’97 (dummy)</td>
<td>-0,53*</td>
</tr>
<tr>
<td>Constant</td>
<td>0,56*</td>
</tr>
<tr>
<td>R^2</td>
<td>0,37</td>
</tr>
<tr>
<td>F-change</td>
<td></td>
</tr>
<tr>
<td>(N = 766)</td>
<td>*p &lt; 0,05</td>
</tr>
</tbody>
</table>

A The variable “media consumption” is a proxy for the factual information content in various media channels. Values are assigned ex post facto on the basis of the average knowledge score among those reporting the channel as the most important source of information on the election.
Notes

1 Acceptance and retention, however, is linked to prior beliefs and values according to Ticenor et. al. 1970.
2 Other considerations were also important of course. In the Norwegian case, the cost of the technical infrastructure and the ambition to reach everyone in the sparsely populated countryside, were also important.
   Newspaper reading is on the decline but still high in comparative terms. In the mid 90’s 74 percent of the adult population red a newspaper daily. The decline is most pronounced among the young.
4 It is important to note that Robinson (1976) uses the concept for another purpose. He is arguing that this part of the media audience is particularly susceptible for negative news journalism. It is the manipulation not the education of the group that is of interest to Robinson.
5 The empirical evidence presented, by Neuman (tables 6.1 to 6.3) may also be interpreted in favour of the contrary position. To extent this is a discussion on whether the glass is half empty or half full.
6 One of these studies is of particular interest. Per Torvik (1972) reports that the introduction of TV in the northern parts of Norway increased the “information on national politics” more among the less educated than among the highly educated. On closer scrutiny it becomes obvious that the applied indicator of “information on nation politics” must be regarded a proxy at best. The ability to recognise pictures of party leaders was used as indicator. An alternative indicator based on the ability to name regional candidates for the national assembly from the party voted for, yielded no significant knowledge gain, but this finding was dismissed as irrelevant because the national television did not report on these local matters.
7 If a respondents is ranked as number 135 with regard to political knowledge in the first interview and number 99 in the second, the knowledge level has increased somewhat. Note that more than one respondent can have the same rank.
8 The index is based on pare wise comparisons. If two parties are correctly positioned relative to each other, the score is one. The final index is the sum of correct par wise comparisons ranging from 0 to 10.
9 Fewer indicators may lead to a less reliable index. This may effect the results and hence the conclusions. In this case the results suggest that the level of political knowledge was less stable between 2001 and 2005 than between 1997 and 2001. This seems unlikely. As a consequence, education stands out as a much stronger predictor in the 2001-2005 data, than in the 1997-2001 data. In turn, this may change the unique explanatory power assigned to each of the three variables: education, education x TV-use and education x newspaper-use.
10 An attempt to construct indicators of preferred media source on politics on the basis of the respondents’ ratings of several media sources obtained in 2005, yielded insignificant results. To get around this problem the indicators for preferred media source from 2001 was tested as an alternative indicator. Assuming that the media habits are relatively stable, this may not be a big problem.
11 The four fixed response alternatives were. “Very well”, “Fairly well”, “Not well” and “Not at all”. Unfortunately, this question was asked only in the 2005 election survey.
12 The result may mean that most people find that the media they consume meet their expectations, i.e. that it reflects that differences in expectations to different media may lead to similar assessments of the quality and importance of the various media.
The media channels were assigned values according to the average political knowledge score within the group of respondents that reported the channels as their preferred source of political information.