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A Matter of Context: A Comparative Study of Media Environments and News Consumption Gaps in Europe

ADAM SHEHATA and JESPER STRÖMBÄCK

Research has shown that individual-level characteristics such as socioeconomic status and political interest are becoming more important as predictors of news consumption in a rapidly changing media environment. Despite this general trend, this article argues that the importance of individual-level predictors of news consumption varies between national media environments. We use extensive survey data from 16 European countries and multilevel modeling in order to investigate both contextual-level and cross-level effects on news consumption. The results show that media environment characteristics have additional effects on news consumption beyond the effects of individual-level characteristics such as education and political interest, but also moderating impacts on these individual-level predictors of news consumption. More specifically, national media environments characterized by higher levels of newspaper-centrism are related to smaller gaps in newspaper reading between those with high and low levels of education and political interest. Lower degrees of newspaper-centrism are, on the other hand, related to a weaker "lower-class bias" of television news and larger gaps in news consumption between those with and without high political interest. These findings are discussed in light of previous research on news consumption, knowledge, and participation gaps as well as cross-national comparative research.

Keywords news consumption, comparative research, cross-level linkages, media environments, news consumption gaps

One of the most important tasks of the media is to provide people with the information they need to be self-governing, and it has been suggested that "*the* central question for [political communication research] concerns how the media aid citizens in becoming informed voters" (Holbert, 2005, p. 511). For the media to inform people, a prerequisite is that people pay attention to the news. Hence, the question of who the consumers of news are has always been of interest to media scholars.

Most research on news consumption has, however, focused on individual-level factors, in practice treating people as "atomized individuals unaffected by their immediate surroundings" (Althaus, Cizmar, & Gimpel, 2009, p. 252). Implicitly, the assumption has been that the media environment does not matter for people's news consumption. It is only recently that research has begun to explore how people's news consumption (Althaus et al., 2009; Delli Carpini, Keeter, & Kennamer, 1994; Elvestad & Blekesaune,

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2008; Prior, 2007; Zukin & Snyder, 1984) and political knowledge (Jerit, 2009; Jerit, Barabas, & Bolsen, 2006; Curran, Iyengar, Lund, & Salovaaro-Moring, 2009) are shaped by contextual factors related to the media environment, and there is virtually no research on how media environmental factors moderate the influence of individual-level factors in explaining news media consumption.

In fact, we are only aware of one study that investigates the impact of both individual-level and media environmental factors on news consumption cross-nationally (Elvestad & Blekesaune, 2008). If the media environment indeed matters for people's news consumption, this lack of comparative research is problematic, particularly since there is a tendency for scholars to assume that research findings from one's own country are valid everywhere.

Against this background, the purpose of this article is to investigate the extent to which contextual factors related to the media environment influences people's news consumption. More specifically, the purpose is to investigate (a) whether media environmental factors have an *additional* effect on news media consumption after controlling for individual-level factors such as socioeconomic status and personal motivations and (b) whether socioeconomic status and personal motivations are more strongly related to news media consumption in some media environments than others.

Literature Review

Most research on news consumption and its antecedents has focused on the importance of factors on the individual level of analysis, such as demographic, socioeconomic, and motivational factors (Althaus et al., 2009; Aarts & Semetko, 2003; Delli Carpini, 2004; Delli Carpini & Keeter, 1996; Donohew, Palmgreen, & Rayburn, 1987; Kwak, 1999; Norris, 2002; Prior, 2007; Zaller, 1992). In general, this research shows that news consumption is positively correlated with education, age, socioeconomic status, political interest, knowledge, and involvement.

However, people do not decide whether to follow or not follow the news in isolation from their surroundings and the media environments in which they are nested. Media consumption is a matter of both supply and demand, and the social contexts and the media environment matter for both. Thus, there is a need for research linking factors on the individual level of analysis to factors on the system level of analysis (Curran et al., 2009; Jerit, 2009; Jerit et al., 2006; McLeod, Pan, & Rucinski, 1995; Paek, Yoon, & Shah, 2005). Still, it is only recently that scholars have begun to investigate the influence of contextual factors on individual's news consumption. Three studies are particularly important in this context.

The first is Prior's (2007) research on how increasing media choice in the United States has affected people's news consumption. This research has shown that news consumption, learning about politics, and electoral volatility have changed over time, "not so much because people are different today, but rather because the media environment is different" (Prior, 2007, p. 19). In essence, changes in the media environment have triggered changes in news consumption and made it easier both to find and avoid news and current affairs: "Political information in the current media environment comes mostly to those who want it. In the starkest terms, broadcast television reduced the importance of individual content preferences, while cable and Internet raise them to a level of importance not seen before" (Prior, 2007, p. 26).

The second is Althaus and colleagues' (2009) research on the geography of news consumption in the United States. This research has shown that there are geographical patterns in news consumption, and that these patterns are significantly shaped by the structure and demographic tendencies of local media markets. Not only does their research show that media market structures and demographics exert a dual influence on the geography of

news media use, but also that "market-level demographics along with supply-side indicators of market size and complexity tended to be of greater importance than individual-level demand characteristics for explaining self-reported news exposure" (Althaus et al., 2009, p. 269).

The third is Elvestad and Blekesaune's (2008) study of national and individual differences in newspaper reading in Europe. In short, this study showed that while individual differences explain most of the variation in newspaper reading, "a considerable share of the national variation may be explained by variables at the national level" (Elvestad & Blekesaune, 2008, pp. 442–443). More specifically, about 6% of the variance in newspaper reading could be explained as systematic variation between countries.

In contrast to communication scholars, political scientists have a rather long tradition of exploring how contextual and individual-level factors interact to shape individual behavior. This is not least the case with respect to the antecedents of political involvement among citizens where political science research, for instance, has focused on the impact of political institutions on civic activism. More specifically, research in this area has shown that political participation is driven not only by socioeconomic status and personal motivations (Leighley, 1995; Norris, 2002; van Deth, Montero, & Westholm 2007; Verba, Schlozman, & Brady, 1995), but also by the specific character of political institutions (Lijphart, 1997). Furthermore, in their classic cross-national study of political participation, Verba, Nie, and Kim (1978) argued that gaps in political involvement produced by individual-level factors such as socioeconomic status are highly dependent upon contextual factors related to political institutions.

These insights are valuable for understanding how contextual and individual-level variables shape patterns of news consumption for two reasons. First, news consumption can be seen as a form of political involvement in itself (Lewis-Beck, Jacoby, Norpoth, & Weisberg, 2008, p. 85), even though it is conceptually and empirically distinct from participation (Price & Zaller, 1993; Teorell, Torcal, & Montero, 2007; Verba et al., 1995). From this perspective, it is no coincidence that news consumption is driven by the same individual-level factors as other indicators of political involvement, psychological as well as behavioral. Second, just as participation gaps along socioeconomic lines differ between countries due to political system characteristics, so might the influence of socioeconomic status and personal motivations on news consumption depend upon media system and media environmental characteristics that vary between nations.

Thus, while it is likely that media environmental factors have an additional influence on individual news consumption beyond the traditional individual-level predictors, media environmental characteristics may in addition moderate the effects of these individual-level predictors. As shown by Jerit et al. (2006) and Curran et al. (2009), media environmental factors related to media content appear to have an impact on political knowledge; hence, it is likely that media environmental factors in themselves may also have an impact on individual news consumption.

To explore the additional and moderating effects of media environmental characteristics on news consumption, cross-national and comparative research is essential. Not only does comparative research draw our attention to "imperatives and constraints built into the very structure" of communication arrangements (Blumler & Gurevitch, 1995, p. 76), it is also crucial to avoid naïve universalism and to increase variance with respect to media environmental characteristics. Cross-national comparative research on the influence of media environmental characteristics on news consumption might in addition inform research related to uses and gratifications as well as the knowledge gap hypothesis, two areas where the importance of contextual factors and cross-national variance has been largely neglected.

In their influential work on comparing media systems, Hallin and Mancini (2004) suggest that one of the most important media system characteristics is the structure of media markets and, more specifically, the strength of a mass circulation press. This media system characteristic refers both to the level of newspaper circulation and whether newspapers are mainly read by an elite or by a general readership. Hallin and Mancini also note that the development of a mass circulated press is accompanied by differences in the "relative roles of print and electronic media. In countries where mass circulation newspapers are absent, the mass public relies heavily on electronic media for information" (p. 24). Norris (2002, pp. 84–89) similarly distinguishes between newspaper-centric and television-centric countries, where extensive newspaper reading and little attention to TV entertainment characterize the former whereas the latter is characterized by extensive use of TV entertainment and low newspaper circulation.

Both Hallin and Mancini (2004) and Norris (2002) have furthermore shown that the degree of newspaper- and television-centrism has a geographical distribution, where the television-centric countries are found mainly in southern Europe while newspaper-centric countries are found in northern Europe. Countries that belong to the democratic corporatist (northern European) model of media and politics are mainly newspaper-centric, while countries that belong to the polarized pluralist (Mediterranean) model are mainly television-centric. Countries that form part of the liberal (north Atlantic) model fall in between (Hallin & Mancini, 2004).

To investigate whether media environmental factors have an additional and moderating influence on news media consumption, we will thus focus our research on differences and similarities across European countries belonging to different models of media and politics. Following Hallin and Mancini (2004) and Norris (2002), the key media environmental characteristic whose influence on news consumption we will investigate is degree of newspaper- and television-centrism.

Hypotheses

To reiterate, the purpose of this article is to investigate whether media environmental factors have an additional effect on news media consumption after controlling for individual-level factors and whether socioeconomic status and personal motivations are more strongly related to news consumption in some media environments than in others. It should be noted that when we speak of effects and impact, we are referring to effects and impacts in the statistical sense of the words. Whether these correspond to real-world *causal* effects is ultimately an empirical question, but at present there is no cross-national data that would allow a proper study of causal effects. Inspired by Paek et al. (2005, p. 592), Figure 1 illustrates and summarizes the hypothesized relationships that will be tested in this study.

The first step in this investigation is to explore the effects of the individual-level factors socioeconomic status and personal motivations on news consumption. As virtually all research, albeit seldom cross-national, has shown that news consumption tends to be positively correlated to socioeconomic status and personal motivations (Althaus et al., 2009; Aarts & Semetko, 2003; Delli Carpini, 2004; Kwak, 1999; Norris, 2002; Prior, 2007; Zaller, 1992), we expect this relationship to hold true across countries with different media environments and even when controlling for other demographic factors. There is one exception, however, concerning the impact of socioeconomic status on consumption of television news. This impact has been shown by past research to be negative (Neuman, Just, & Crigler, 1992; Schoenbach & Lauf, 2002, 2004). As Eveland and Scheufele (2000)

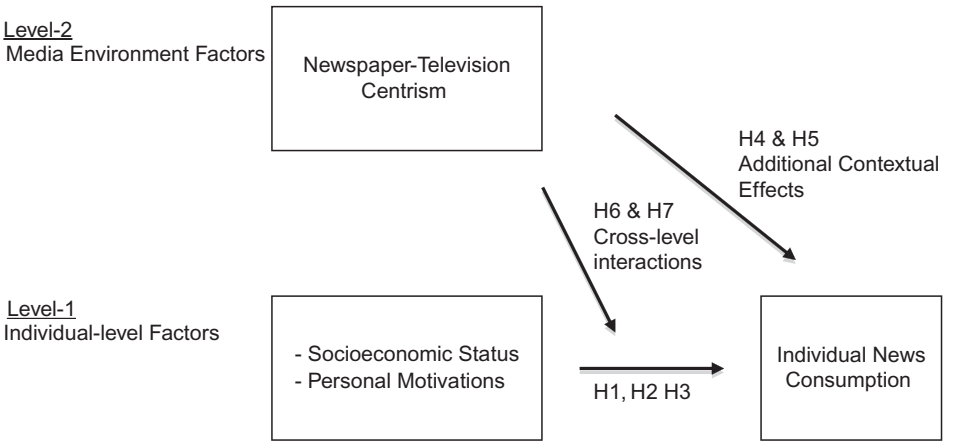

Figure 1. Two-level model of individual news consumption.

have observed: "If there is a bias to television news, it is a lower class bias" (p. 220). With respect to individual-level factors, we will hence test the following hypotheses.

H1: Socioeconomic status and personal motivations will have positive effects on reading about politics and current affairs in newspapers, controlling for demographic variables and other forms of news consumption and media environmental factors.

H2: Socioeconomic status will have negative effects on television news consumption, controlling for demographic variables and other forms of news consumption and media environmental factors.

H3: Personal motivations will have positive effects on television news consumption, controlling for demographic variables and other forms of news consumption and media environmental factors.

While individual-level factors such as socioeconomic status and personal motivations are important, one central claim of this article is that news media consumption is not determined solely by individual-level factors and that research needs to be extended to investigate the influence of contextual factors on individual news consumption. News consumption always takes place in a certain context, which calls for a multilevel perspective where the importance of factors on both the individual (micro) and the contextual (macro) level of analysis is investigated and linked (McLeod et al., 1995). Particularly important in this context might be the degree to which a country is newspaper- or television-centric (Hallin & Mancini, 2004; Norris, 2002).

We believe that the degree of newspaper- and television-centrism is likely to influence individual newspaper reading and television news consumption as a result of contagion and socialization processes (Althaus et al., 2009, p. 253). Thus, we believe that the specific relationship between media environment properties and individual members of society is more bidirectional than unidirectional. As Pan and McLeod (1991) note: "Socialization, conformity, and coorientation involve bidirectional processes between individuals and society, in that societal norms, values, and structural constraints are recognized, learned, or adopted by individuals" (p. 150). In that sense, a "culture" of newspaper reading that emerged

in the late 19th and early 20th century in some European countries, but not others, has persisted so as to shape individual media use even today (Hallin & Mancini, 2004). This "culture" is mutually reinforced by national media characteristics—such as the character of the newspaper market—and audience demand.

Similar socialization processes, we believe, underlie the influence of television-centrism on individual television news consumption. Growing up and living in an environment characterized by ubiquitous entertainment television viewing among friends, family, and relatives will affect one's own media use. More specifically, we hypothesize that such a media environment will decrease consumption of television news beyond the impact of individual-level characteristics. However, as television-centrism refers to one end on the newspaper/television-centrism dimension, these expectations can be stated in terms of the level of newspaper-centrism as well. High levels of newspaper-centrism always correspond to low levels of television-centrism, and vice versa. Therefore, we will mainly refer to the "level of newspaper-centrism" in order to keep the argument as clear as possible throughout the article and facilitate interpretation of the results. Accordingly, we will investigate the following (direct) contextual effects hypotheses.

H4: Newspaper-centrism will have a positive relationship with reading about politics and current affairs in newspapers beyond the effects of individual-level factors.

H5: Newspaper-centrism will have a positive relationship with television news consumption beyond the effects of individual-level factors.

Finally, Figure 1 also depicts hypothesized cross-level interaction effects between media environment characteristics and individual news consumption. The crucial question here concerns the extent to which contextual factors moderate the effects of factors on the individual level. As shown by research in political science, both individual attitudes and behavior operate within institutional constraints, and factors on an institutional level can—but need not—compensate for differences and gaps on the individual level. As observed by Verba and colleagues (1978), although individual motivation and resources do give some a participatory advantage in politics, "Institutions can mobilize citizens to a level of activity above that which would be predicted by their socioeconomic resource level, or institutions can inhibit political activity so that it is at a level below that which one would predict on the basis of socioeconomic characteristics" (p. 80).

Based on this logic, we argue that the specific character of the media environment in which one lives influences the effects of individual-level factors on news consumption. More specifically, we expect a higher degree of newspaper-centrism to be related to a *weaker* influence of socioeconomic status and personal motivation on newspaper reading. The reason is not only that newspaper reading is more widespread in newspaper-centric countries, but also that newspapers in such countries are directed toward a mass public rather than a small, well-educated, and politically educated elite (Hallin & Mancini, 2004). This mobilizing function of newspaper-centrism would depend on both a greater supply and a greater demand for newspapers. A lower degree of newspaper-centrism (and a higher degree of television-centrism), on the other hand, is likely to have an opposite influence on television news consumption. Entertainment-based media environments will probably not only decrease television news consumption in general, but also influence how socioeconomic status and personal motivations are related to television news consumption. In television-centric (and less newspaper-centric) countries, it is simply easier to avoid news and current affairs for those who are not predisposed to follow the news. If this holds true, television-centrism (and a lower degree of newspaper-centrism) would function as a demobilizing contextual factor by (a) *weakening the negative impact* of socioeconomic

status and (b) *increasing the positive impact* of motivations on consumption of television news (Prior, 2007).

To investigate the cross-level interaction between individual-level and contextual-level factors, and more specifically the moderating influence of newspaper-centrism with respect to the impact of socioeconomic status and personal motivations on consumption of newspapers and television news, we will test three hypotheses. These are, again, formulated in terms of levels of newspaper-centrism.

H6: The more newspaper-centric the media environment, the weaker the positive effects of socioeconomic status and personal motivation on reading about politics and current affairs in newspapers.

H7: The more newspaper-centric the media environment, the stronger the negative effect of socioeconomic status on television news consumption.

H8: The more newspaper-centric the media environment, the weaker the positive effect of personal motivation on television news consumption.

Methodology and Data Analytic Strategy

This study uses European Social Survey (ESS) data from 16 countries classified as democratic corporatist, polarized pluralist, or liberal countries according to the Hallin and Mancini (2004) framework for classifying media systems.[1] All surveys are based on face-to-face interviews with a representative sample of citizens from each country. Three cross-sectional survey rounds have been conducted, in 2002/2003, 2004/2005, and 2006/2007. Response rates ranged from a low of 33.5% to a high of 80% in ESS round 1, 43.6% to 78.8% in ESS round 2, and 46% to 72.8% in ESS round 3.[2] Data from all three rounds will be used when available. Multilevel modeling will be used to test the hypotheses above. This technique is preferred for two reasons. First, from a statistical perspective, the clear spatial structure of the data violates any assumptions of independent observations. That is, "individuals belonging to the same context will presumably have correlated errors" (Luke, 2004, p. 7; Hox, 2002), a violation that renders OLS regression inadequate. Second, multilevel modeling makes sense from a theoretical perspective, as we argue that news consumption is not determined by individual-level factors only, but media environment characteristics at the country level as well. Such two-level hypotheses are best estimated using multilevel modeling.

Dependent Variables

The European Social Survey contains six media use questions regarding newspapers, television, and radio that are identical across the three rounds. An opening question about the total time spent watching television, reading newspapers, and listening to radio was followed by questions focusing on consumption of news and politics in each of the channels. Reading news about politics and current affairs in newspapers is measured by the follow-up question to general newspaper reading: "How much of this time is spent reading about politics and current affairs?" Television news consumption is similarly based on the survey question "On an average weekday, how much of your time watching television is spent watching news or programs about politics and current affairs?" Both of these news consumption variables range from 0 (*no time at all*) to 7 (*more than 3 hours*).

Due to the bounded and skewed distribution of the two dependent variables (see Appendix), all hypotheses will also be tested using multilevel logit and Poisson models

in order to validate the findings from the hierarchical linear models. Any significant deviations in findings are highlighted in the Results section.

Individual-Level Independent Variables

This study will use education as an operationalization of socioeconomic status. Education is measured as the number of years of full-time education completed, ranging from 0 to 17 with integers representing 2-year intervals. Income was not included as a measure of socioeconomic status due to severe missing data problems. The nonresponse for income amounted to 25% of the entire sample, which was considered a substantial problem for the external validity of the study.

Personal motivation for seeking out information in the news media is measured by the question, "How interested would you say you are in politics?" This variable ranges from 1 (*not at all interested*) to 4 (*very interested*). While studies have suggested that motivation is a multidimensional concept and suggested various indicators of motivation (David, 2009; Weaver, 1980), political interest is one of the most relevant motivations given the political focus of this study (Strömbäck & Shehata, 2010). Furthermore, in order to better capture the influence of contextual media environment characteristics on news consumption, alternative individual-level media use measures are included as control variables. That is, the models predicting reading news about politics and current affairs in newspapers will control for individual television news consumption. The models predicting television news consumption will similarly control for consumption of politics and current affairs content in newspapers.

Apart from the independent variables discussed above, all models estimating the effects of education and political interest will control for basic sociodemographic variables such as age and gender (see Appendix for a full description of variables).

Country-Level Independent Variables

We will test our hypotheses of contextual and cross-level effects using two media environment measures, both tapping the level of newspaper-centrism of each country but based on different data. This is done in order to evaluate the validity and sensitivity of the findings depending upon how the degree of newspaper/television-centrism is measured.

Newspaper/Television-centrism 1 (NTC1). Following the definitions and operationalizations of Norris (2000), the degree of newspaper/television-centrism is measured at the country level as the within-country average amount of total newspaper reading minus the within-country average amount of total television viewing, based on the ESS data. This measure of newspaper/television-centrism was recoded to range between 0 (maximum level of television-centrism observed) and 1 (maximum level of newspaper-centrism observed). High values reflect countries with high levels of general newspaper reading and low levels of general television viewing, while low values on the centrism measure represent countries with low general newspaper reading and high levels of general television viewing.

Newspaper/Television-centrism 2 (NTC2). The second measure of the degree of newspaper/television-centrism is assessed using country-level data on newspaper reading and television viewing from external data sources: the average newspaper circulation per 1,000 adults according to World Press Trends (World Association of Newspapers, 2005) and the average television viewing per person according to the European Audiovisual

Table 1
Levels of newspaper reading and television viewing in Europe

	Average time spent watching television (ESS data)[a]	Average time spent reading newspapers (ESS data)[b]	Average television viewing per person (minutes/day 2004)[c]	Average newspaper circulation per 1,000 adults (2004)[d]
Austria	3.78	1.70	156	372
Belgium	4.28	1.09	193	173
Switzerland	3.25	1.66	166	398
Germany	4.32	1.52	210	313
Denmark	4.28	1.42	161	301
Spain	4.24	0.91	218	123
Finland	3.91	1.77	167	522
France	4.35	1.06	204	160
United Kingdom	5.06	1.61	222	332
Greece	5.06	0.70	244	68
Ireland	4.58	2.06	177	234
Italy	4.62	1.20	240	115
Netherlands	4.51	1.57	192	303
Norway	3.90	1.95	156	651
Portugal	4.16	0.97	214	69
Sweden	3.75	1.68	151	489

[a]Mean scores of the general television viewing scale ranging from 0 (*no time at all*) to 7 (*more than 3 hours*). Source: European Social Survey (2008) cumulative data, rounds 1–3.
[b]Mean scores of the general newspaper reading scale ranging from 0 (*no time at all*) to 7 (*more than 3 hours*). Source: European Social Survey (2008) cumulative data, rounds 1–3.
[c]Source: European Audiovisual Observatory (2009).
[d]Source: World Association of Newspapers (2005).

Observatory. This newspaper/television-centrism measure was constructed similar to the first one by subtracting the average television viewing from the average newspaper circulation for each country. Due to different units of measurement—television viewing in minutes versus newspaper circulation per 1,000 adults—both variables were first standardized (mean = 0, $SD = 1$) before they were combined. NTC2 was then recoded to range between 0 and 1.

The raw figures making up the two media environment measures are presented in Table 1. The numbers reveal strong similarities in the pattern of media use in Europe regardless of data source.

Figure 2 displays the relationship between newspaper reading and television viewing graphically using the two different sets of data sources. The two scatter plots reveal a similar underlying structure of media use among the 16 countries. Southern European countries are clustered in the lower right corner, reflecting their lower levels of newspaper-centrism. Northern European countries are clustered in the upper left corner, reflecting higher levels of newspaper-centrism. It is obvious that the negative linear relationship that reflects the level of newspaper-centrism is stronger and more clear-cut in the second graph based on external data sources. However, the correlation between the two measures, NTC1 and NTC2, is still high (Pearson $r = .812$).[3]

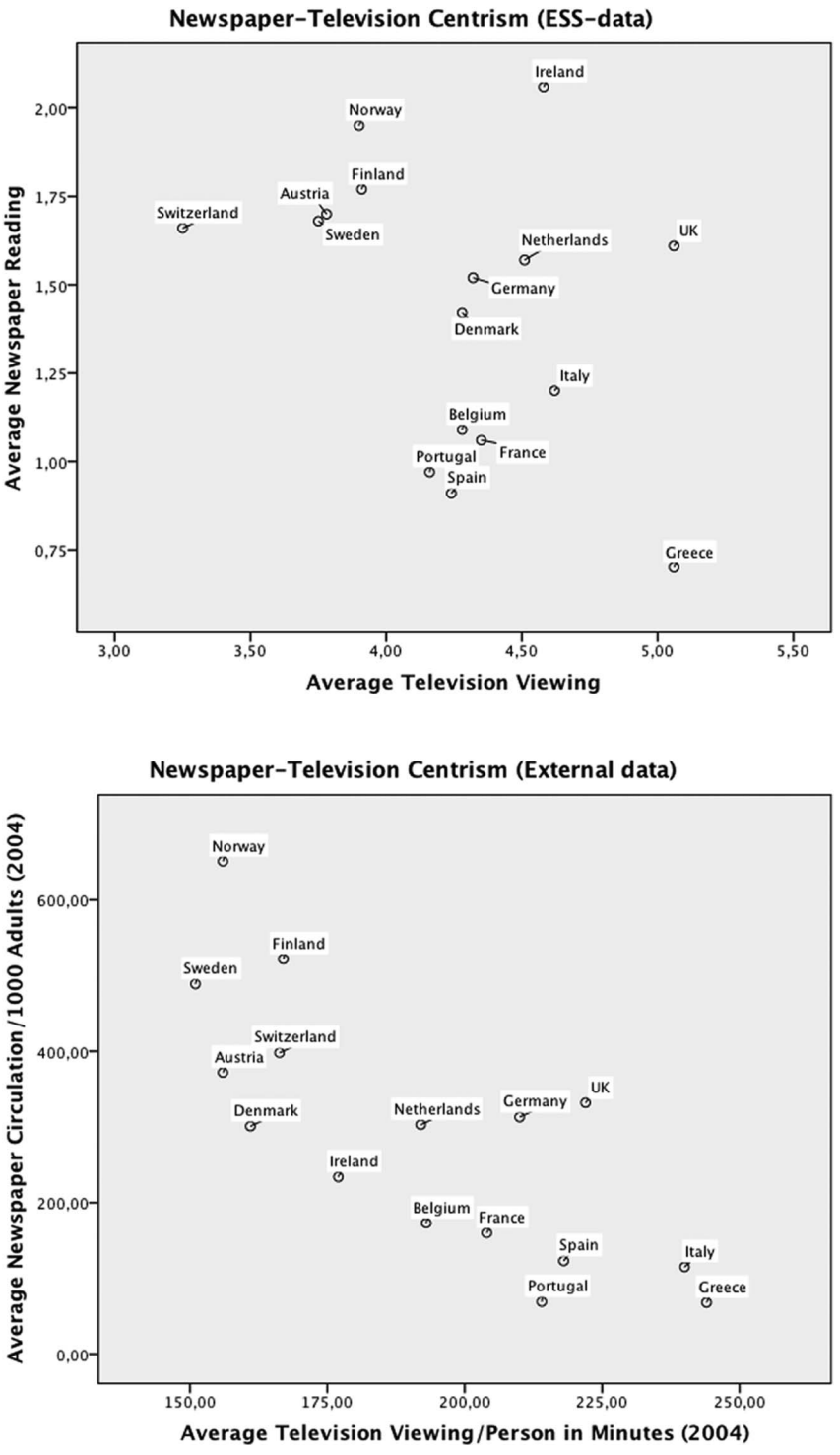

Figure 2. Newspaper/television-centrism in Europe.

It should be noted that the different variables making up the two newspaper/television-centrism measures are highly correlated over time.[4] Overall, then, the evidence suggests that our newspaper/television-centrism measures capture important national media environment characteristics that are fairly stable over time.

In order to control for other media environment characteristics not captured by newspaper/television-centrism, all models will include dummy variables tapping Hallin and Mancini's (2004) distinction between democratic corporatist, polarized pluralist, and liberal media systems. As individual news consumption might be influenced by contextual political variables as well, the multilevel models will also control for political interest at the country level, measured as the country average of political interest. All models will also include year dummies in order to remove the impact of any trend effects.

Results

The findings will be presented in two steps. First, we will analyze and test our hypotheses regarding individual, contextual, and cross-level interaction effects on reading about politics and current affairs in newspapers. Second, we will analyze and test our hypotheses regarding the same effects on watching news and programs about politics and current affairs on television.

Reading About Politics and Current Affairs in Newspapers

Table 2 presents the results of our multilevel models predicting reading about politics and current affairs in newspapers at the individual level. An initial "intercept-only" model was also estimated (not shown), containing the overall average value of reading about politics and current affairs in newspapers across individuals and countries. The variance components of this intercept-only model reveal that country differences explain 7% of the variability in reading politics and current affairs content in newspapers (the intraclass correlation is 0.07).

Turning to our newspaper hypotheses, Models 1a and 1b in Table 2 are based on the following specification:

$$\begin{aligned} \textit{Reading Politics}_{ij} = {} & \gamma_{00} + \gamma_{10}\textit{Education} + \gamma_{20}\textit{Political Interest} + \gamma_{30}\textit{Television News} \\ & + \gamma_{40}\textit{Age} + \gamma_{50}\textit{Gender} + \gamma_{01}\textit{Country Interest} \\ & + \gamma_{02}\textit{NTC} + \gamma_{03}\textit{Dem.Corp} + \gamma_{04}\textit{Liberal} \\ & + u_{0j} + e_{ij}. \end{aligned} \tag{1}$$

The only difference between Models 1a and 1b is the measure of newspaper/television-centrism, where all "a" models in the table are based on the first media environment measure (NTC1) while all "b" models are based on the second (NTC2).

The results show that H1 is supported. Both education and political interest have a positive effect on newspaper reading when controlling for individual-level factors (age, gender, and television news consumption) as well as country-level characteristics (degree of newspaper-centrism, media environment characteristics, and average political interest). For instance, every additional 2 years of completed education increases reading about politics and current affairs in newspapers by 0.06 on the 8-point scale. Given that the political

Table 2
Two-level hierarchical linear models predicting reading about politics and current affairs in newspapers

	Model 1a	Model 2a	Model 3a	Model 1b	Model 2b	Model 3b
Fixed						
Education	0.063**(0.002)	0.103**(0.003)	0.063**(0.002)	0.063**(0.002)	0.095**(0.003)	0.063**(0.002)
Political interest	0.253**(0.003)	0.254**(0.003)	0.218**(0.008)	0.253**(0.003)	0.253**(0.003)	0.225**(0.006)
Television news consumption	0.118**(0.002)	0.117**(0.006)	0.119**(0.002)	0.118**(0.002)	0.117**(0.002)	0.119**(0.002)
Gender	0.118**(0.006)	0.117**(0.006)	0.119**(0.006)	0.118**(0.006)	0.117**(0.006)	0.119**(0.006)
Age	0.008**(0.000)	0.008**(0.000)	0.008**(0.000)	0.008**(0.000)	0.008**(0.000)	0.008**(0.000)
Country-level interest	−0.180 (0.178)	−0.201 (0.192)	−0.178 (0.179)	−0.254 (0.264)	−0.283 (0.269)	−0.251 (0.264)
NTC1	0.759**(0.120)	1.179**(0.065)	0.605**(0.124)			
NTC1 × Education		−0.075**(0.005)				
NTC1 × Political Interest			0.064**(0.013)			
NTC2				0.666**(0.189)	1.092**(0.195)	0.518* (0.191)
NTC2 × Education					−0.072**(0.005)	
NTC2 × Interest						0.060**(0.012)
Democratic corporatist country	0.013 (0.109)	0.015 (0.117)	0.015 (0.110)	−0.002 (0.170)	−0.012 (0.174)	0.003 (0.171)
Liberal country	0.106 (0.088)	0.098 (0.045)	0.111 (0.088)	0.075 (0.135)	0.058 (0.137)	0.082 (0.135)
Random						
Country-level σ_u^2	0.007	0.008	0.007	0.015	0.016	0.016
Individual-level σ_e^2	0.685	0.683	0.685	0.685	0.683	0.685
Model fit statistics						
AIC	219,935.9	219,756.2	219,919.3	219,944.4	219,731.1	219,926.4
BIC	220,067.5	219,897.2	220,060.3	220,076.0	219,872.1	220,067.4
N individuals/countries	89,358/16	89,358/16	89,358/16	89,358/16	89,358/16	89,358/16

Note. Estimates are unstandardized regression coefficients with standard errors in parentheses. All models also contain two dummy variables in order to control for trend effects between survey rounds. Source: European Social Survey (2008) cumulative data, rounds 1–3.

*$p < .01$; **$p < .001$.

newspaper reading scale is based on increments of about 30 min, this corresponds to an increase of approximately 3.5 min a day, or 25 min a week, for each additional 4 years of education. Of course, these calculated estimations should be viewed with caution as they are based on self-reported estimates of newspaper reading and a rather rough scale of 30-min increments (see Appendix). However, they do give some indications of the size of the education effects. In comparison, a one-unit increase in political interest increases reading by approximately 7.5 min a day (0.25 × 30 min).

Furthermore, media environment characteristics matter for a person's newspaper reading as well. The more newspaper-centric (and less television-centric) the media environment, the more people read newspapers, irrespective of their individual characteristics. This finding is consistent regardless of what newspaper/television-centrism measure we use (NTC1 in Model 1a or NTC2 in Model 1b).

Given the coding of the NTC measures, the interpretation of their coefficients is quite straightforward. They show how much individual reading about politics and current affairs in newspapers changes when the least newspaper-centric country is compared to the most newspaper-centric country. Thus, based on NTC2, citizens in the most newspaper-centric countries score 0.666 higher on the 0–7 politics and current affairs reading scale than citizens in the least newspaper-centric country, controlling for the other individual- and country-level characteristics. Using similar calculation logic as above, one can conclude that citizens in the most newspaper-centric environment spend about 20 min more a day reading about politics and current affairs than citizens in the least newspaper-centric country (0.67 × 30 min). This influence is stronger when using NTC1 as the media environment measure. Overall, then, H4 is supported by the data.

Models 2a and 2b as well as Models 3a and 3b in Table 2 present the findings related to H6 concerning how the impact of individual characteristics varies between media environments, based on the following two models[5]:

$$\begin{aligned} \textit{Reading Politics}_{ij} = {} & \gamma_{00} + \gamma_{10}\textit{Education} + \gamma_{20}\textit{Political Interest} + \gamma_{30}\textit{Television News} \\ & + \gamma_{40}\textit{Age} + \gamma_{50}\textit{Gender} + \gamma_{01}\textit{Country Interest} \\ & + \gamma_{02}\textit{NTC} + \gamma_{03}\textit{Dem.Corp} + \gamma_{04}\textit{Liberal} + \gamma_{12}\textit{Education} \times \textit{NTC} \\ & + u_{0j} + e_{ij}. \end{aligned} \tag{2}$$

$$\begin{aligned} \textit{Reading Politics}_{ij} = {} & \gamma_{00} + \gamma_{10}\textit{Education} + \gamma_{20}\textit{Political Interest} + \gamma_{30}\textit{Television News} \\ & + \gamma_{40}\textit{Age} + \gamma_{50}\textit{Gender} + \gamma_{01}\textit{Country Interest} \\ & + \gamma_{02}\textit{NTC} + \gamma_{03}\textit{Dem.Corp} + \gamma_{04}\textit{Liberal} + \gamma_{22}\textit{Political Interest} \\ & \times \textit{NTC} + u_{0j} + e_{ij}. \end{aligned} \tag{3}$$

Again we expect the findings to be similar regardless of which measure of media environments is used. While this appears to be the case (no differences between "a" and "b" models), the results actually appear to only partly support H6. The negative cross-level interactions between education and NTC indicate that the positive impact of education on reading about politics and current affairs in newspapers becomes weaker as the level of newspaper-centrism increases. This finding supports H6, but the positive interaction effects between political interest and NTC imply that political interest is more important

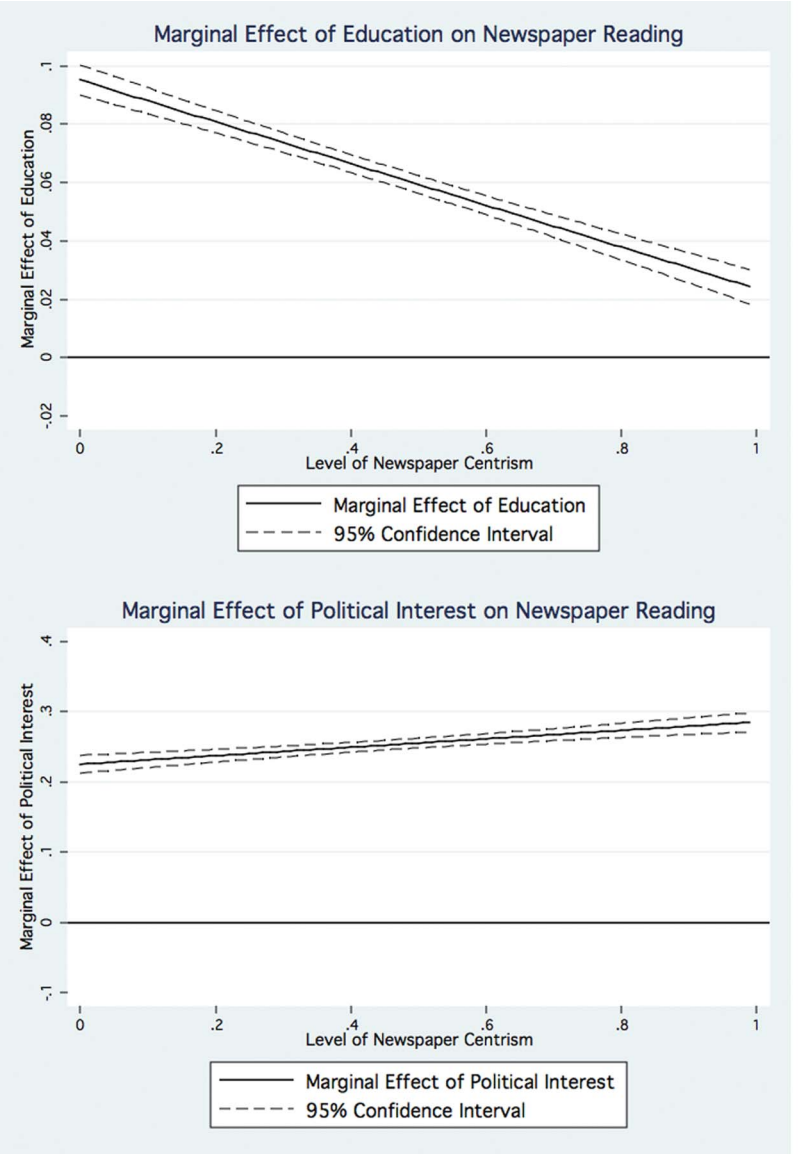

Figure 3. Marginal effects of education and political interest on reading about politics and current affairs in newspapers.

in newspaper-centric than in television-centric countries. These interactions are displayed graphically in Figure 3, which shows the marginal effects of education and political interest on newspaper reading for different levels of newspaper-centrism. The education graph shows that the positive education effect—while statistically significant across all observed media environments—becomes weaker as the level of newspaper-centrism increases, but it never falls below 0. In fact, the education effect is about four times as strong in the least newspaper-centric (0.095) compared to the most newspaper-centric country (0.023).

The conditional effect of political interest is also positive and statistically significant across all observed media environments. The rising slope illustrates the unexpected positive interaction effect, indicating that political interest has a stronger effect on reading

about politics in more newspaper-centric environments. However, the substantial differences between media environments are smaller than for education in this regard. That is, while the interaction effect is significant in itself, the conditional effect of political interest is only about 20% stronger in the most newspaper-centric (0.285) compared to the least newspaper-centric country (0.225).

It should be noted, however, that the interaction terms between political interest and newspaper-centrism proved to be sensitive to model specification.[6] While most of the findings go against our initial hypothesis regarding the moderating impact of newspaper-centrism on political interest, the evidence should perhaps best be viewed as inconclusive at this point.

Watching Television News

Using the same model specifications as presented in Equations 1 through 3, the influence of individual-level and country-level characteristics on television news consumption is presented in Table 3. An "intercept-only" model (not shown) reveals a relatively low intraclass correlation of 0.03, which means that about 3% of the total variability of television news consumption can be attributed to country characteristics.

The columns labeled Model 4a and Model 4b contain two "overall models" based on the two different NTC measures. As can be seen, H2 and H3 are supported by the data. Education has a negative impact on television news consumption, while political interest increases consumption of television news, controlling for the other factors in the model. For instance, every additional 2 years of education decreases television news consumption by 0.047 on the 0–7 scale when controlling for both individual-level factors (political interest, age, gender, and reading about politics and current affairs in newspapers) and country-specific characteristics (degree of newspaper-centrism, media environment characteristics, and average political interest). Thus, each 4 years of additional education is related to a decrease in television news consumption of about 3 min a day, or 21 min a week. Again, these are rough estimations based on the television news consumption scale and should be considered with caution.

Even though there does not seem to be any significant overall influence of our media environment measures on television news consumption on the individual level, inclusion of cross-level interactions shows that the importance of education and political interest varies between media environments. These findings are, again, consistent regardless of which NTC measure is used, and the signs of the interaction effects are all in line with H7 and H8. Figure 4 displays these interactions graphically.

The negative interaction effects between education and newspaper-centrism (Models 5a and 5b), for instance, suggest that the negative education effect of about 0.013 television news consumption units decreases by approximately 0.074 as NTC is increased from its lowest value of 0 to its highest value of 1 (Model 5b). Thus, as evident from the first graph in Figure 4, education has its strongest negative impact on television news consumption in the most newspaper-centric countries. Put differently, we could say that while there is a low-education bias in terms of television news consumption in all media environments, this bias is more prominent in more newspaper-centric than in less newspaper-centric countries. Translated into viewing time, each additional 4 years of education decreases television viewing by about 1 min a day in the least newspaper-centric country, while this difference amounts to approximately 5 min in the most newspaper-centric environment.

H8 is also supported by the data. Models 6a and b, as well as the second graph in Figure 4, show that political interest has a stronger influence on television news consumption in less newspaper-centric (and more television-centric) countries than in more

Table 3
Two-level hierarchical linear models predicting television news consumption

	Model 4a	Model 5a	Model 6a	Model 4b	Model 5b	Model 6b
Fixed						
Education	−0.047**(0.002)	−0.014*(0.005)	−0.047**(0.002)	−0.047**(0.002)	−0.013**(0.004)	−0.047**(0.002)
Political interest	0.280**(0.005)	0.281**(0.005)	0.417**(0.011)	0.280**(0.005)	0.280**(0.005)	0.370**(0.009)
Reading politics in newspapers	0.242**(0.005)	0.240**(0.005)	0.242**(0.005)	0.242**(0.005)	0.239**(0.005)	0.242**(0.005)
Gender	0.043**(0.008)	0.042**(0.008)	0.043**(0.008)	0.043**(0.008)	0.042**(0.008)	0.042**(0.008)
Age	0.015**(0.000)	0.015**(0.000)	0.015**(0.000)	0.015**(0.000)	0.015**(0.000)	0.015**(0.000)
Country-level interest	−0.155 (0.499)	−0.172 (0.503)	−0.163 (0.445)	−0.168 (0.520)	−0.198 (0.532)	−0.176 (0.519)
NTC1	−0.347 (0.335)	−0.006 (0.341)	0.254 (0.329)			
NTC1 × Education		−0.061**(0.008)				
NTC1 × Political Interest			−0.248**(0.018)			
NTC2				0.153 (0.372)	0.593 (0.383)	0.628 (0.373)
NTC2 × Education					−0.074**(0.007)	
NTC2 × Interest						−0.193**(0.016)
Democratic corporatist country	−0.009 (0.304)	−0.007 (0.307)	−0.018 (0.296)	−0.224 (0.336)	−0.234 (0.343)	−0.239 (0.335)
Liberal country	0.089 (0.245)	0.083 (0.247)	0.070 (0.239)	−0.017 (0.265)	−0.035 (0.272)	−0.038 (0.265)
Random						
Country-level σ_u^2	0.056	0.057	0.053	0.060	0.063	0.060
Individual-level σ_e^2	1.400	1.399	1.397	1.400	1.398	1.398
Model fit statistics						
AIC	283,823.2	283,772.3	283,640.5	283,823.9	283,717.9	283,694.8
BIC	283,954.8	283,913.3	283,781.5	283,955.5	283,858.9	283,835.8
N individuals/countries	89,358/16	89,358/16	89,358/16	89,358/16	89,358/16	89,358/16

Note. Estimates are unstandardized regression coefficients with standard errors in parentheses. All models also contain two dummy variables in order to control for trend effects between survey rounds. Source: European Social Survey (2008) cumulative data, rounds 1–3.

*$p < .01$; **$p < .001$.

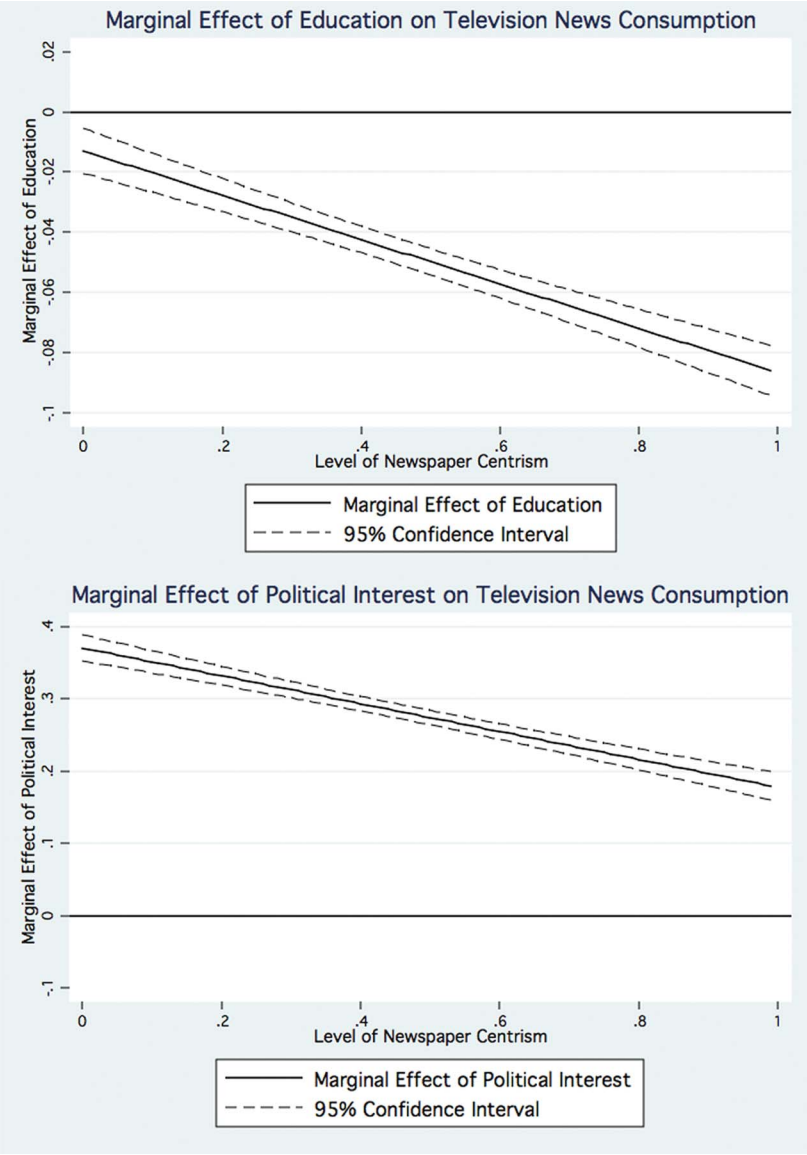

Figure 4. Marginal effects of education and political interest on television news consumption.

newspaper-centric countries. For example, a one-unit increase in political interest increases television news consumption by 0.370 units in the least newspaper-centric country, according to Model 6b. But the size of this effect is 0.190 units lower in the most newspaper-centric country. As shown by the graph, the impact of political interest on television news consumption is decreased by almost 50% as we move along the newspaper-centrism scale. In terms of viewing time, a one-unit increase in political interest amounts to roughly 11 more min of viewing in the least newspaper-centric country, compared to 6 min in the most newspaper-centric country. That is, political interest has a positive influence in all countries but is substantially weaker in media environments that are newspaper-centric.

In sum, the results suggest that the influence of education and political interest on television news consumption does depend on media environment characteristics. Gaps in television news consumption between education groups are smaller in less newspaper-centric than in more newspaper-centric countries. But the larger gaps in newspaper-centric environments are "inverted gaps": Citizens with low education consume more television news than those with high education, and this is more pronounced the more newspaper-centric the media environment is. Consumption gaps based on political interest are, on the other hand, significantly smaller in more newspaper-centric compared with less newspaper-centric countries.

Discussion and Conclusion

During the last few decades, the media environments in advanced postindustrial democracies have been radically transformed. Cable and digital TV as well as the Internet have increased the supply of both news and entertainment and put traditional news media that are struggling to keep their audience share and revenues under increasing pressure. As a result, people's media consumption has changed, as has the content of various newspapers and broadcast media (Prior, 2007; Wattenberg, 2004). Never before has it been as easy to both find and avoid news and current affairs in the media (Bennett & Iyengar, 2008; Prior, 2007).

But how important are contextual factors related to the media environment for people's news consumption? Does the media environment really matter that much for what kind of media and media content people consume? Are not individual-level characteristics related to socioeconomic status and personal motivations more important for an understanding of people's news consumption and its antecedents?

The results of this study clearly suggest that media environments do matter, above and beyond individual-level characteristics. While individual-level factors such as education and political interest are important predictors of news consumption, as shown by numerous studies (Althaus et al., 2009; Aarts & Semetko, 2003; Donohew et al., 1987; Kwak, 1999; Norris, 2002), the level of newspaper-centrism of a specific media environment can foster media use and alter gaps in news consumption between different segments of the population.

More specifically, our results show that a higher degree of newspaper-centrism is related to higher levels of attention to political and current affairs content in newspapers beyond what is predicted by individual-level factors, a weaker importance of education as a predictor of political newspaper reading, and, as a consequence, smaller gaps in political newspaper reading between those with high and low levels of education. Contrary to our expectations, though, the results indicate that political interest is more strongly related to political newspaper reading in newspaper-centric countries. This interaction effect is comparatively weak, however, and also proved to be sensitive to model specification. With respect to television, the results furthermore show that a higher degree of newspaper-centrism is related to a stronger negative impact of education on television news consumption, and as a consequence a more pronounced "lower class bias" of television news, as well as a weaker importance of political interest as a predictor of television news consumption, and as a consequence smaller gaps in television news consumption between groups with high and low levels of political interest.

Theses results have several implications. First, despite the structural and behavioral changes that have swept across Western democracies, differences in media environments still play an important role in shaping individual news media behavior. This finding is important since it speaks to the discussion about the homogenization of media systems and environments (Esser & Pfetsch, 2004; Hallin & Mancini, 2004). Although there might be

a process of homogenization, there are still clear cross-national differences with respect to media environments and media consumption. Given the consistent evidence for a specific geographic media environment pattern, media environmental characteristics appear to hold back or mitigate forces of homogenization.

Second, without a cross-national and comparative research design—which enables variation in media environment characteristics—the impact of these contextual factors would remain invisible. Research findings from one country cannot be assumed to be valid everywhere, not even within the family of postindustrial democracies. This strongly suggests the need for caution when drawing conclusions based on single-country studies. This should be taken into consideration in further research on, for example, knowledge gaps and uses and gratifications, research areas where news consumption is a crucial variable.

Finally, the findings of this study suggest that not only political institutions but also media environmental factors could be of key importance for the distribution of political involvement in democratic countries. Just as political institutions can both narrow and widen socioeconomic gaps in political participation, so can media environments. But a necessary—albeit not sufficient—condition for decreasing participation gaps across educational and motivational lines is a broad reach and wide exposure to the news media. Some media environments provide such opportunities and a media supply that is conducive to political learning. Others do not. Future studies should therefore investigate whether the degree of newspaper/television-centrism is related not only to news consumption gaps, as shown here, but also to gaps in political knowledge and participation.

Notes

1. The countries included are Austria (62.3% average response rate across the survey rounds), Belgium (60.5%), Denmark (61.2%), Finland (69.5%), France (44.2%), Germany (54.3%), Greece (79.4%), Ireland (62.3%), Italy (52.3%), the Netherlands (64.0%), Norway (65.6%), Portugal (70.7%), Spain (58.0%), Sweden (67.1%), Switzerland (44.0%), and the United Kingdom (53.6%).

2. For technical details, see the ESS homepage: http://ess.nsd.uib.no/.

3. This suggests that the differential response rates have not affected data quality significantly, with the possible exception of Switzerland, which ranks higher on newspaper-centrism in NTC1 than in NTC2.

4. The correlations across ESS rounds are high with regard to both average newspaper reading (Pearson $r = .98$, .97, and .97) and average television viewing (.94, .91, and .97). Available World Press Trends data confirm this country-level stability over time with regard to newspaper circulation (Pearson $r = .99$, .99, and 1.00), as do European Audiovisual Observatory data on average television viewing (.96, .96, and .99). It should be noted that the World Press Trends over-time comparisons are based on data for 2004, 2005, and 2008 due to data availability.

5. Two models with separate interaction terms were estimated instead of one model including both interactions due to the risk of inducing multicollinearity problems.

6. Alternative specifications yielded partly different results. While replication of Models 3a and 3b using multilevel logit fully confirmed the results presented in Table 2 (i.e., a positive interaction term), multilevel Poisson generated a negative interaction effect, indicating support for the hypothesis that political interest has a weaker effect in newspaper-centric countries.

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Appendix: Survey Questions

General Newspaper Reading

On an average weekday, how much time, in total, do you spend reading the newspapers?

0. No time at all
1. Less than ½ hour
2. ½ hour to 1 hour
3. More than 1 hour, up to 1½ hours

4. More than 1½ hours, up to 2 hours
5. More than 2 hours, up to 2½ hours
6. More than 2½ hours, up to 3 hours
7. More than 3 hours

Reading About Politics and Current Affairs

And how much of this time is spent reading about politics and current affairs?

0. No time at all
1. Less than ½ hour
2. ½ hour to 1 hour
3. More than 1 hour, up to 1½ hours
4. More than 1½ hours, up to 2 hours
5. More than 2 hours, up to 2½ hours
6. More than 2½ hours, up to 3 hours
7. More than 3 hours

General Television Consumption

On an average weekday, how much time, in total, do you spend watching television?

0. No time at all
1. Less than ½ hour
2. ½ hour to 1 hour
3. More than 1 hour, up to 1½ hours
4. More than 1½ hours, up to 2 hours
5. More than 2 hours, up to 2½ hours
6. More than 2½ hours, up to 3 hours
7. More than 3 hours

Television News Consumption

And again on an average weekday, how much of your time watching television is spent watching news or programs about politics and current affairs?

0. No time at all
1. Less than ½ hour
2. ½ hour to 1 hour
3. More than 1 hour, up to 1½ hours
4. More than 1½ hours, up to 2 hours
5. More than 2 hours, up to 2½ hours
6. More than 2½ hours, up to 3 hours
7. More than 3 hours

Education

How many years of full-time education have you completed?

Political Interest

How interested would you say you are in politics—are you . . .

1. Very interested
2. Quite interested
3. Hardly interested
4. Not at all interested

Age

In what year were you born?

Table A1
Mean values and standard deviations for individual-level variables

	Reading politics (0–7)	General newspaper reading (0–7)	Television news (0–7)	General television consumption (0–7)	Education (0–17)	Political interest (1–4)	Age	Gender (1 = male) (%)
Austria	1.12 (0.91)	1.70 (1.30)	1.62 (1.20)	3.78 (2.06)	5.92 (1.57)	2.58 (0.89)	43.8 (17.7)	46
Belgium	0.66 (0.86)	1.09 (1.23)	1.83 (1.18)	4.28 (2.02)	5.89 (1.87)	2.31 (0.90)	45.2 (18.4)	49
Switzerland	1.09 (0.78)	1.66 (1.10)	1.52 (1.05)	3.25 (2.02)	5.49 (1.89)	2.65 (0.85)	48.3 (17.9)	46
Germany	1.03 (0.81)	1.52 (1.14)	1.76 (1.13)	4.32 (1.94)	6.25 (1.66)	2.66 (0.87)	47.0 (17.9)	49
Denmark	1.03 (0.93)	1.42 (1.18)	2.29 (1.27)	4.28 (1.91)	6.35 (2.13)	2.76 (0.80)	47.5 (17.7)	49
Spain	0.65 (0.87)	0.92 (1.14)	1.82 (1.28)	4.24 (1.99)	5.31 (2.75)	1.97 (0.87)	46.4 (19.0)	49
Finland	1.20 (0.81)	1.77 (1.08)	2.03 (1.23)	3.91 (1.90)	5.88 (2.04)	2.42 (0.79)	47.1 (18.7)	48
France	0.70 (0.90)	1.06 (1.16)	1.99 (1.33)	4.35 (2.07)	5.77 (2.04)	2.30 (0.93)	47.6 (18.1)	46
United Kingdom	0.83 (1.03)	1.61 (1.57)	2.09 (1.51)	5.06 (1.98)	6.13 (1.75)	2.42 (0.91)	48.6 (18.8)	46
Greece	0.45 (0.87)	0.70 (1.20)	1.91 (1.53)	5.06 (2.07)	4.80 (2.35)	2.09 (0.96)	48.8 (19.1)	44
Ireland	1.19 (1.33)	2.06 (1.67)	2.06 (1.59)	4.58 (1.93)	6.13 (1.73)	2.31 (0.95)	45.8 (17.9)	45
Italy	0.77 (0.91)	1.20 (1.17)	2.12 (1.28)	4.62 (1.85)	5.19 (2.36)	2.15 (0.92)	45.9 (17.9)	47
Netherlands	1.03 (0.92)	1.57 (1.25)	2.17 (1.31)	4.51 (1.95)	6.17 (2.04)	2.66 (0.81)	48.5 (17.4)	44
Norway	1.32 (0.89)	1.96 (1.14)	2.31 (1.25)	3.90 (1.81)	6.38 (1.86)	2.51 (0.77)	45.6 (17.5)	52
Portugal	0.71 (0.96)	0.97 (1.18)	2.16 (1.47)	4.16 (1.97)	3.52 (2.37)	2.01 (0.94)	49.2 (19.2)	40
Sweden	1.09 (0.77)	1.68 (0.99)	1.95 (1.15)	3.75 (1.83)	5.85 (1.80)	2.63 (0.82)	46.6 (18.7)	50

Source: European Social Survey (2008) cumulative data, rounds 1–3.

Table A2
Correlation matrix of country-level media environment variables (Pearson *r*)

	Newspaper reading (ESS1)[a]	Newspaper reading (ESS2)[a]	Newspaper reading (ESS3)[a]	Television viewing (ESS1)[a]	Television viewing (ESS2)[a]	Television viewing (ESS3)[a]	Newspaper circulation (WPT)[b]	Television viewing (EAO)[c]
NR (ESS1)	1							
NR (ESS2)	.98	1						
NR (ESS3)	.97	.97	1					
TV (ESS1)	−.31	−.28	−.21	1				
TV (ESS2)	−.34	−.31	−.16	.94	1			
TV (ESS3)	−.21	−.17	−.26	.91	.97	1		
NC (WPT)	.81	.77	.82	−.50	−.54	−.45	1	
TV (EAO)	−.71	−.69	−.70	.67	.75	.67	−.78	1

[a]Source: European Social Survey (2008) cumulative data, rounds 1–3.
[b]World Association of Newspapers (2005).
[c]Source: European Audiovisual Observatory (2009).