Measuring Exposure to News Media Content in Cross-National Electoral Studies*

Susan A. Banducci

Department of Politics
University of Exeter
Amory Building
Rennes Drive
Exeter, Devon EX4 4QJ, UK
email: s.a.banducci@exeter.ac.uk

Georgios Xezonakis

Department of Politics
University of Exeter
Amory Building
Rennes Drive
Exeter, Devon EX4 4QJ, UK
email: G.Xezonakis@exeter.ac.uk

In general, it is understood that experiments are the only way to truly establish whether media content is influencing political attitudes. However, we know that experimental settings do not accurately reflect how citizens encounter or engage with news media content in the real world. Perhaps this is the reason why research on media effects is characterized by conflicting findings with very little consistent evidence of mass media effects across different contexts. Existing observational studies of media effects tend to rely on reported measures of news exposure and ignore media content all together or use media content data to describe the information context but do not explicitly link measures of respondent exposure to media content. Furthermore, the existing body of research on media effects focuses on a single country or on a comparison of small countries. If we hope to test media effects in a cross-national setting we must develop appropriate measures of news exposure to link with media content. Using the only publically available cross-national data set allowing linkages between media content and voter attitude survey, we propose an approach to testing media effects cross-nationally that approximates experimental conditions in a real world setting. We test this approach in a media priming model that examines whether the EU can be primed in evaluations of national governing parties. The data we use for this study come from the voter and media studies of the 2009 European Election Study.

* *Paper prepared for presentation at the PIREDEU Final Conference, 18-19 November, 2010, Brussels, Belgium. The data and research presented in this paper is funded through the FP7 Infrastructure Programme PIREDEU [www.piredeu.eu]. We would like to thank all of the researchers and partners involved in this project without whom the analysis presented in this paper would not be possible. All errors and omissions in the paper are the responsibility of the authors.
Introduction

The influence of the media has attracted growing attention since the 1960s. Following the experimental breakthrough of Iyengar, Peters, and Kinder (1982), news has been shown to affect behavior such as electoral choice (Bartels, 1993; Sanders & Norris, 2005), turnout (Ansolabehere & Iyengar, 1995) and attitudes, including partisan identification (Evans & Norris, 1999; Norris, Sanders, Curtice, Scammell, & Semetko, 1999). Because the data used in this paper focuses on European elections and attitudes it is also worth noting the growing body of work which demonstrates some impact of the media opinion about EU integration (De Vreese & Boomgaarden, 2006; de Vreese & Semetko, 2004) and vote choice (Hobolt, Tilley and Spoon 2008) and turnout in European elections (Banducci and Semetko 2003). In addition, individuals’ use of information sources has been identified as an important factor influencing support for the EU in general or for specific EU policies (e.g., Norris, 2000). Recently more dynamic studies of media effects have further specified when and for whom media content matters regarding changes in opinions about European affairs (e.g., Schuck & De Vreese, 2006).

Despite this attention since the 1960s, media effects have not featured prominently in in large scale cross-national electoral studies due to several difficulties. First, there is an absence of media content data across a large number of countries has meant most comparative media effects research is based on a small number of country comparisons. Therefore, modeling of contextual effects has not been robust. Second, and this is not unique to cross-national studies but plagues all media effects research, it is difficult to link media content data to respondents in a way that takes into account individual patterns of news consumption and the actual messages contained in
the content. While this control is usually achieved in experimental settings it is difficult to approximate in observational studies. As researchers, we want to be assured the media content we are interested in is what citizens and voters are responding to whether this be advertisements or news coverage. We propose a method of addressing this issue through better measures of exposure and achieving variation in media coverage using a large scale cross-national election study. Finally, the media tend to be treated as all pervasive in the sense that media content does not vary within a single national context. Cross-national studies allow for greater contextual variation in media content.

The 2009 European Election Study provides an excellent opportunity to address the above outlined shortcomings in data and design. Coordinated efforts at measuring media content and survey based measure of exposure to content, allow us to better model media effects. Furthermore, the large number of countries (also media systems) in the dataset allow for both greater variation in media content and the modeling of conditional impact of media systems on media effects. In essence, we are able to link which outlets and how often an individual uses a particular outlet and what they were exposed to in terms of media content. Our objectives in this paper are two-fold:

- Demonstrate a method of linking media content and survey responses that allows testing for media effects.
- Demonstrate the potential for modeling the conditional impact of the media on attitudes and behavior in cross-national election studies.
We demonstrate the potential for this approach by testing a media priming model. Specifically, we apply this approach to a model testing whether the news media can prime Europe in evaluations of national governing parties. Studies that suggest an increased role of European integration have claimed that this role is conditional upon the degree of party competition on this issue - the more intense the competition the greater the effect (de Vries, 2007). Following research from the priming literature (Iyengar and Kinder 1987), after developing our approach we see how it performs in testing whether media agendas can prime the European Issue in such a way as to elevate its salience in the calculus of party evaluations.

**Media Effects Research: Exposure and Change**

The important role of political information in the formation of political attitudes reported behavior is generally accepted (see delli Carpini and Keeter 1996, for example). Also, it is understood that the media are the dominant source of this political information for citizens. Therefore, there seems to little question that the media matter in politics in general and in elections in particular. Despite this accepted truism, researchers have been hard pressed to demonstrate without question that media influence political attitudes and behaviors. Of the situation, Mondak (1995) wrote:

...what seems perfectly obvious at face value does not always lend itself to ready empirical confirmation. If media truly are a nearly all-pervasive force, then we are left with a variable that does not vary. Largely for precisely this reason, researchers have struggled to demonstrate the existence of media effects on political behavior. Methodological leverage on a question evaporates when there
In media effects research the driving question is whether exposure to media content causes changes in behavior and or attitudes. In its simplest formulation, as media effects researchers we want to know whether watching or reading a particular news story, viewing a particular campaign advertisement or being exposed to a string of media messages will alter how citizens perceive political candidates or leaders, the salience of issues in political choices or whether citizens are engaged in the campaign. The first step in determining media effects is to examine whether exposure to a message is accompanied by any observed change in behavior or attitudes. For example, we might expect that citizens more likely to report seeing advertisements for party A are more likely to vote for party A. If a correlation or covariation is observed in our data, the underlying causal mechanism could be one of media effects – seeing the campaign advert has caused citizens to be more likely to support Party A. However, the underlying causal mechanism can also be one of self-selection where partisan supporters are more likely to view and pay attention to ads from their own party or even spurious where a third factor, such as the viability of the party, is actually causing both the number of advertisements and the support for the party.

Within political communications research, the most appropriate technique to establish media effects, ruling out self-selection and a spurious relationship, is to employ experiments. In an experiment, manipulation of the media content and the intervention with the designated groups allows the researcher to control how and to what messages the experimental groups are exposed. Controlling for observable as well as unobservable factors is achieved through random
assignment. Therefore, through controlling when and to what subjects are exposed, researchers can be fairly certain that observed changes in attitudes or reported behaviors can be attributed to the treatment or differences in exposure to media content. Experiments have been very successful in demonstrating consistent and strong media effects starting with the landmark study by Iyengar and Kinder (1987).

When experiments are not available, the conclusions about media effects are more tenuous and require careful design consideration. As many have noted, in survey based research it is difficult to sort out cause and effect. Many measures that are used of exposure (such as days spent reading a newspaper) are highly correlated with the political variables of interest such as political interest and probability of voting or becoming engaged in the campaign. Furthermore, surveys, or observational work, measure reported exposure and cannot control what other messages respondents might be exposed to, nor account for them in a model. Furthermore, most observational studies do not take into account the actual message to which respondents have been exposed.

In general, outside of experimental studies, there are two models of studying media effects in observational or survey based research: 1) measure exposure only; 2) measure exposure and describe media content or 3) link media content to public opinion survey data (see Jerrit and Barabas 2009 on this point). Many studies on negative advertising and the effects of television on political attitudes and behavior fall into the first category of analysing survey data alone (e.g., Brians and Wattenberg 1996; Eveland and Scheufele 2000; Zhao and Chaffee 1995). These studies measure consumption and then enter days viewing or reported exposure to advertising,
for example, as independent variables but do not include measures of media content. This design, the one most often used in survey based political communications research (Barabas and Jerrit 2009). In addition to yielding conflicting results (for example, see debate on the mobilizing impact of negative advertising), relying on consumption measures alone is to base the demonstration of media effects on measures that are flawed in many respects (see Bartels 1993; Price and Zaller 1993; Prior 2006). In addition to lacking a measure of the actual content, because these consumption measures are highly correlated with the dependent variables of interest such as political interest, knowledge and engagement it is difficult to sort out cause and effect in cross-sectional research.

Within this first category of research are studies that do try to distinguish between media consumption sources and in a way estimate content from the type of outlet. Examples of the second model of media effects research, include Aarts and Semetko (2003) who analyse the difference between viewing habits and its relation to political attitudes and involvement. Also, in a much cited study following up on the videomalaise hypothesis (Newton 1998), the author concludes that watching TV does not lead to malaise by relying on exposure to television news. The only measure of content is to differentiate between entertainment and news programming. Despite the assumption about what different outlets deliver in terms of news, there is no attention paid to what the actual content of the news or entertainment programming actually is that is then linked to the respondents. Another set of studies describe the media content and then go on to use survey data with no explicit links made between exposure and content. In examining the impact of the campaign on attitudes toward the Euro during the Danish referendum, panel data are used to measure media effects during the campaign (de Vreese and Semetko 2004). The
media content analysis that accompanies the study is used to identify which outlets had more pro or negative news and then the effect of exposure to these outlets are used as predictors of vote choice rather than content itself. Of course, the advantage of this design is the use of panel data.

There is a smaller category of studies linking media content to survey data (Jerit, Barabas, and Bolsen 2006, Price and Czilli 1996; Curran et al 2009). For example in Jerit, Barabas and Bolsen (2006) they link aggregate indicators of the saliency of an issue in the news to public opinion polls to estimate the impact of the information environment on political knowledge. The study is explicit in linking the media content but uses only an aggregate indicator allowing it to vary across surveys rather than by an individuals news consumption patterns both in terms of frequency and outlets. Therefore, the results indicate an effect of the general news environment on knowledge and as such does not approximate media effects as demonstrated in an experimental setting. Barabas and Jerrit (2009) improve measurably on the design by comparing within subjects demonstrating that news prominence is related to policy specific knowledge. This within subject design more closely approximates experiments in media effects research. However, the link to content by consumption measures is still not present.

As Mondak (1995) noted in studying media effects in real world settings means we are interested in something that does not vary in cross-sectional studies. As we argue in this paper, cross-national studies offer an excellent opportunity to allow the media content to vary. The potential for cross-national media effects with linked media and survey data (the third category of studies) is demonstrated by some EU studies that make use of the European Election Study media content analysis data. Hobolt, Spoon and Tilley (2008) and Banducci and Semetko (2003) link data on
the visibility of the European Union in the news at the country level to survey data on electoral
choices and turnout. Hobolt, Spoon and Tilley (2008) demonstrate that as the visibility of the EU
increases, the importance of European integration as a cue in voting decisions increases.
Banducci and Semetko (2003) show that as the visibility of the European election increases in
the news media in the weeks leading up to the election increases the probability of voting.
However, in these studies media content is simply used as a contextual indicator and could be a
proxy for the competitiveness of the campaign, positive EU sentiments or a host of other
variables making it difficult to establish an influence of the media independent of other
correlated campaign or contextual variables. While still demonstrating potential these studies
have not incorporated aspects of the media system which may condition the impact of media
content such as the partisan nature of the press or regulations on news media coverage of
elections. Baek (2009) has demonstrated that these aspects of the media system are important for
understanding the influence of political communication on political behavior.

Furthermore, the importance of measuring cross-national variation in media effects research is
evident when one considers that two individuals have different probabilities of being exposed not
just based on individual patterns of consumption and the intensity of the message but aspects of
the media system that will influence the probability of exposure such as the number of outlets or
restrictions on political broadcasting. Sometimes explicit within the media effects research on
EU attitudes is the cross-national character of the research. Researchers are examining the
variation in attitudes across a number of member states. The cross-national character of the
research allows for several advantages over single or small n country studies. First, there is
greater variation in the media content. If we are explicit about wanting to link the actual message
to the probability of exposure doing so in a cross-national setting allows us greater variation in
the type of message whether it be the visibility, tone or frame used in the news message. Single
country studies that aggregate news content or can only capture a handful of outlets are plagued
by a lack of variation in the message.

Despite having the shortcomings outlined above, the greatest strength of observational media
effects research is that it attempts to examine people in real world settings and in the way in
which they would usually encounter political information. The approach we describe that was
developed in the 2009 European Election Study improves upon past research by (1) linking
measures of media content to individual level survey responses in the analysis, (2) conducting
individual level analysis that accounts for individual variation in exposure to content (e.g.
controls exposure to content as in experimental studies) (3) accounting for the conditioning
impact of media systems on media effects (4) approximating experimental studies while
capturing people and news information effects in the real world. Our goals are to provide a
technique for optimizing the 2009 Election Study data, make progress in the study of cross-
national media effects research which has a solid empirical and methods foundation in media
effects research and substantively investigate how the political and media system context may
condition media effects.
The 2009 European Election Study and Cross-National Media Effects Research

Using cross-national observational data, how then can researchers using the European election study utilize the data in a way that maximizes the potential for demonstrating media effects? The researchers cooperating on the 2009 European Election Study coordinated efforts at collecting survey and media content data in a way that maximizes the potential for linking the two sources of data. Due to the cross-section nature of the data collection effort – a post election survey only, we are still limited to between subject comparison but we do suggest a method for within subject comparisons. However, we can compare individuals across the types of news consumed and by the level of exposure to the same source of news allowing one to assess the amount of variation due to exposure versus content.

There are three issues which we address in the design of measuring exposure to news content in the 2009 European Election Study:

- Explicitly linking coded media content to news consumption patterns for the coded content. We construct measures that closely approximate the experimental setting where the researcher if able to control exposure to content.
- Account for exposure to other content by measuring possible exposure to other content.
- Consider how the media environment influences cross-national variation in exposure measures.
In the below sections we describe the post-election survey instruments and the media content analysis portions of the 2009 Election Study demonstrating how we then are able to link the two types of data in order to study media effects.

**Media Content Analysis**

The media content analysis as well as the post election survey were carried out within the framework of PIREDEU (www.piredeu.eu), Providing an Infrastructure for Research on Electoral Democracy in the European Union. PIREDEU is funded by the European Union’s FP 7 program (for more details see data documentation report in Schuck et al., 2010).

The content analysis was conducted for news items published or broadcast within the three weeks running up to the election. Since election days varied across countries also the coding period varied from e.g. May 14th-June 4th for some countries up to May 17th – June 7th for others. Over this three week period, the content analysis was carried out on a sample of national news media coverage in all 27 EU member states.1 In each country we include the main national evening news broadcasts of the most widely watched public and commercial television stations. We also include two ‘quality’ (i.e. broadsheet) and one tabloid newspaper from each country. Because our intention was to match the media content with the survey data, we were mindful that we should capture content from the outlets with the largest audiences. Of course, the more fragmented the markets (as we show below) the more difficult it is to capture most of the audience when only covering 5 outlets in each country. Nevertheless, we feel our sample of

---

1 We focus on national television and newspapers because these media are consistently listed as the most important sources of information about the EU for citizens in Europe (*Eurobarometer* 54–62).
outlets was flexible enough to give us both a large audience share and to represent the diversity of media voices in a country. Our overall television sample consists of 58 TV networks and our overall newspaper sample consists of 84 different newspapers. Therefore, we measure media content from 142 outlets which is unprecedented in terms of the sheer number of outlets coded. The list of outlets can be found in Schuck et al. (2010). As we demonstrated in the section on the post-election survey this allows us to get a fine grained link to each survey respondent in terms of media content.

All relevant news outlets were collected either digitally (TV and newspapers) or as hardcopies (newspapers). With regard to story selection, for television, all news items have been coded; for newspapers, all news items on the title page and on one randomly selected page as well as all stories pertaining particularly to the EU and/or the EU election on any other page of the newspaper have been coded (within the Political / News; Editorial / Opinion / Comment; and Business / Economy sections). In total, 52,009 news stories have been coded (32,041 newspaper stories and 19,968 TV stories) in all 27 EU-member countries. 19,996 of these news stories dealt specifically with the EU (16,749 newspaper stories and 3,247 TV stories) of which 10,978 news stories dealt specifically with the EU election (8,718 newspaper stories and 2,260 TV stories). The unit of analysis and coding unit was the distinct news story. Coding was conducted by a total of 58 coders at two locations, the University of Amsterdam (The

---

2 Sport, Travel, Housing, Culture, Motor/Auto, Fashion or Entertainment sections have not been coded.
3 In order to be classified as EU story, the EU or any sort of EU institution, policy or synonym had to be mentioned at least once in a story. In order to be classified as EU election story, the EP election or the campaign had to be mentioned explicitly at least once in the story.
For the remainder of the paper, we focus mainly on measures of story topic visibility and prominence. These variables are based on items from the media content analysis indicating the topic of the story. Because our study focused on European parliamentary elections we were particularly interested in news stories that covered the elections or the EU policies and institutions. Therefore we had coders indicated whether stories mentioned the EU, its institutions or the EP elections or campaign. Our measure of EU visibility is then calculated as the proportion of all news stories that mention the EU. The number of mentions of topics is commonly used as a measure of salience and visibility in agenda setting and priming studies (see Barrabas and Jerit 2009). There is also a high degree of reliability on this variable (inter-coder reliability for EU mentioned is Krippendorff’s alpha = .80). We realize that there are reasons to expect the more recent news content will have a greater impact than news content from the beginning of the campaign, however because the visibility can be low in some outlets and because we are more interested in the linking of media content in this paper, we aggregate the visibility over the entire three week campaign period. This is also consistent with Barrabas and Jerit (2009) who aggregate data over a six month period.

---

4 The intercoder reliability scores reported below are based on a combined test including all 58 coders from both locations and is based on a sub-sample of 35 randomly selected news items, including both TV and newspaper items and including EU, EU election as well as non-EU stories (for more detailed information on intercoder reliability see the documentation report, Schuck et al., 2010).

5 The coders were given the instruction to indicate whether the ‘story mention(s) either the European Union, its institutions or policies or the European Parliamentary elections or the campaign.” We also used this instruction as a filter for further coding. Out of the over 48,000 stories coded in the 27 campaign periods, close to 40% mentioned passed this filter so contained some mention of the EU. There are other ways of measuring the visibility of the EU by using the coding of topics in the story. We coded up to three topics per story from a predefined list of topics (consistent with the Party Manifesto Study). However, some of the stories may have covered a specific topic such as the economy and not necessarily focused on the EU as a topic but nevertheless mentioned or discussed the EU in relation to the economy. For example,
Within the post election survey, our aim was to maximise the potential for linking the cross-national media content to the survey data. Our objective is to approximate as closely as possible the experimental researchers manipulation of exposure to media content. Therefore, we need to know whether and for how long respondents had been exposed to the content we coded (as above). As stated many observational media studies rely on self reports of exposure. A commonly used independent variable is how many days, in a typical week, a survey respondent reports watching the news or reading a newspaper. It is perhaps the most important variable in political communications research because any media effect begins with exposure to a message. Days viewing or reading has been used to explain political knowledge, engagement as well as turnout. We know that many behaviors that are socially desirable, such as interest in news, tend to be over-reported and indeed self-reports of exposure to news are no different (Prior 2009). In comparing Nielsen audience estimates to self-reports of viewing form the National Annenberg Election Study, Prior (2009) finds that the election survey over-reports national news audiences by a factor of 3. Given the difficulties of recalling and or estimating behavior in a typical week and the pressure to be socially desirable, it is no surprise that there is over-reporting. Furthermore, non-response bias will tend to produce a sample that has higher levels of political interest and a greater likelihood of news exposure (or a propensity to report news viewing).
Because of these problems with self-reported exposure to television news and newspapers, rather than asking general exposure questions, we asked about exposure to the specific outlets in the sample for the media content analysis. For further testing of our measures and to offer the potential to control for exposure to sources other than those coded in the media content analysis, we also asked about overall exposure to news content as well as exposure to other sources. We give below the questions asked about television news broadcasts in each country which were replicated for the sample of newspapers coded in each country:

**In a typical week, how many days do you follow the news?** [Interviewer prompted: includes news on tv, radio, newspaper]. Answer: 0 thru 7 days.

**In a typical week, how many days do you watch the following news programmes?**
[Interviewer supplied the named news programmes in each country. For example, in the UK interviewers supplied BBC News at 9 and IVT News at 10] Answer: 0 thru 7 days.

**Is there any other channel on which you watch the news more often than these?** Answer Yes or No.
[If YES above, respondents were then asked] **Which one?** {open answer, recorded on pre-coded list of TV channels, if not on list then response noted. Up to three answers coded.}

[Respondents were then asked] **How many days per week?** Answer: 0 thru 7 days.

The above questions yield indicators of respondent’s self reported exposure to the media content. Admittedly, exposure measures are over reported (see Prior 2009), nevertheless our exposure measures on specific outlets appear to have lower levels of over-reporting than the general self-reported measure of how often respondents follow the news. A clear majority (69 per cent) of respondents indicated that they followed the news seven days a week. On the other
hand, only 37 per cent of the sample reported watching one of TV news broadcasts in the follow-up questions seven days a week. The percentage of respondents reading a newspaper seven days a week, as measured by the follow-up questions, was only 15 per cent. There is a great deal of overlap between those who watch television news and read newspapers seven days a week so that the large number of respondents reporting following news seven days a week in the first question is comprised of separate newspaper reader and television news watchers. Therefore, on the face of it, our measure of exposure to a specific outlet does not suffer from the same amount of over-reporting as the usual exposure measures.

*Linking Media Content and Survey Data in the 2009 EES*

We then can use the responses to the above questions to link respondents to the media content. We are able then to produce measures of how respondent (or in experimental language – subjects) vary in terms of exposure to specific content (or a treatment). Furthermore, our treatment does not vary by two groups (a control and treatment) but across 27 media systems and 144 outlets. Therefore, we can effectively compare subjects who watch a particular outlet but who vary by exposure (days viewing) as well as compare individuals who may have similar levels of exposure (for example, seven days) but where media content (in our example, the level of visibility of the EU in the news) varies across outlets. In all cases our control group is comprised of individuals who answered 0 days to television or newspapers outlets in our media sample and who did not say they watched another. Also, we are able to control for the presence of alternative sources of messages with our question of whether another source was viewed more

---

6 This estimate also includes those who read another newspaper or watch another television news broadcast more often than the name outlet from the content analysis.
often. Individuals who did not view or read the outlets names but did watch or read another more often have been dropped from further analysis as we have no measure of news media content for these individuals.

Although our objective was to identify media content for the largest proportion of the sample as possible (and this guided our outlet of selections), given fragmentation of the media markets and news consumption patterns, we are not able to match all respondents with media content. Table 1 shows the distribution within each country of the respondents for whom we are able to match media content from the outlets coded. We also show the proportion of respondents who reported viewing another outlet more often. The table separates our respondents for who we are able to link television content versus those for whom we are able to link newspaper content. For each type of media we are able to match a considerable proportion of the sample. For newspapers, we linked over 42 per cent of respondents to the media content. While this seems low, we note that almost half (25 per cent of the total sample) of those we did not match to media content are in the control group (e.g. they reported that they never read the newspaper). The other half of the respondents we did not match did not read one of the coded newspapers but read another newspaper more. Therefore, we have approximately 17,000 respondents that we can analyse the impact of newspaper content on evaluations of governing parties in our example. For television news broadcasts, we are able to match over 63 per cent of the respondents. Of the respondents that we are not able to match, approximately two-thirds do not watch the news.

---

7 We should note that even though a respondent may have reported viewing another outlet more often we are still able to match them with media content because the respondent did report using one of the outlets we coded in the media content, the respondent just happened to report using another source more often. While some may argue, we are therefore not able to accurately measure the exact content to which the respondent was exposed, we suggest that our approach still yields more reliable results for real world analysis of media effects because we are still able to make within outlet comparisons. We also feel the validity of the approach is demonstrated in the results.
broadcasts we coded and watch another station more. The remaining third then form our control group who are not exposed to any media content because they do not watch television news.

Importantly, we note that the structure of the media system in each country is related to how many respondents we are able to link. For example, despite coding more newspapers than television broadcasts, the greater fragmentation in the newspaper market (more titles as well as regional, local and even free newspapers) means that we are able to link television content for more respondents than for newspapers. Furthermore, there is considerable variation across countries in the proportion linked. In Slovenia, 90 per cent of respondents can be linked to media content while in the UK we link only 68 per cent of respondents and in Luxembourg only 61 per cent. As we limited our analysis to selected newspapers and television broadcasts and had the disregard the number of media choices available to citizens we realize we did not capture the entire market. There is direct link between fragmentation and the proportion of respondents we captured. We tested the relationship between the number of television stations and the proportion of respondents who say they watch another station more often and it is negative. Therefore, as the number of television stations increases the proportion of respondents in each country we are able to link to media content decreases (and the proportion watching other stations increases). The relationship is particularly strong for newspapers and the number of newspaper titles per capita, as this latter indicator increases the proportion we are able to match in a country declines significantly. In a model where we regress the proportion matched to newspaper content by country on the number of titles, the coefficient for titles is negative and statistically significant ($b = -.09$, s.e. = .05).

Ultimately, we should be mindful in a cross-national study of the kind undertaken here that media system characteristics are likely to condition media effects.
There are several ways of linking the respondents to the media content. Because, there are not only differences in terms of linking but also in terms of expected effects between newspapers and television news, we test the effects separately. We would, for example, assume that television is not only the more popular source of news but also that there is likely to be a greater impact of television news because more citizens in Europe trust television as a source of news.\footnote{Data from Eurobarometer 67.7 show that in all but Greece, France and Spain, Europeans are more likely to trust television news than newspapers. The differences can be quite large in countries that have a tradition of a partisan press such as the UK.}

We use two strategies, we link the media content from the main outlets identified by the respondent (the one watched or read most often) and then we also link all content from each television broadcast or newspaper coded. In the former method of linking, we weight the content by the days the respondent spends viewing (or reading) the particular outlet. For example, if a respondent from the UK says she watches the BBC 9 o’clock news seven days a week and IVT news at 10 o’clock three nights, we give the respondent the value for EU visibility as measured in the BBC news and weight that value by seven days. Likewise, someone who watches only BBC at 9 o’clock three nights a week is given the EU visibility (and prominence) score for the BBC weighted by three days. A similar measure is calculated for the main newspaper. For the latter measure, we include sum across each outlet’s content weighted by the respondents reported exposure to that outlet.\footnote{At this stage, as most experimental studies in political communication expose respondents to only one source of information, we are unsure of which measure best reflects how citizens process or use news information from multiple sources. We do not that they are more likely to use trusted sources but we have no individual level measures of trust for each of the outlets coded in the media content. Therefore, we do not hypothesize at this stage that one measure will perform better than the other.}
Testing a Media Priming Model

Our next step is to test a media priming model. Based on the EU issue voting and the priming literature, we expect that when European issues are more prominent in the news that the proximity of the respondent to the national party on European integration will be more influential in predicting the evaluation of the governing party.\footnote{Some analysts of media effects question whether what looks like media priming is an artifact of straightforward learning (e.g., Lenz 2009). The data we use do not have a panel component so we can not test change over the campaign at the individual level. Lacking such data, however, the standard approach is to look at priming among individuals with different levels of exposure; if the putative priming effects are confined to those with low levels of knowledge of the issue or of politics, the process looks more like learning than priming. While we have not tested this in this paper, the approach we outline here could accommodate this test.} We suggest that the effect that attitudes towards European unification have on probability to vote for the governing party is conditional on the visibility of European issues in the news. In order to capture the conditional effect of European issues, we use multiplicative (i.e interaction) terms which represent a powerful methodological tool to test hypotheses about conditional effects (see Brambor et. al., 2005).

Our model is as follows (for more detail see, Banducci and Xezonakis 2010):

\[
(Prob \ Voting \ for \ Party \ J) = B_0 + B_1 [Party \ Identification] + B_2 [Distance \ Left \ Right] + B_3 [Government \ Approval] + B_4 [Retrospective \ Economic \ Evaluations] + B_5 [Distance \ EU Dimension] + B_6 [EU Visibility] + B_7 [EU Visibility* Distance \ EU \ Dimension]
\]

The dependent variable is based on the voting intention scales that are part of the European Election Studies. The specific question asks respondents the following:

We have a number of parties in [country] each of which would like to get your vote. How probable is it that you will ever vote for the following parties? Please specify your views on a 10-point-scale where 1 means "not at all probable" and 10 means "very probable". If you think of [Party 1]: what mark out of ten best describes how probable it is that you will ever vote for [Party 1]?
We use the value for the national governing party (where there is a coalition we use the largest party in the coalition). Our main independent variables of interest are the distance from the governing party on the EU integration scale (self placement by the respondent compared to respondent’s placement of this party). The main coefficients of interest are two. The first is the estimate of the distance from the party on the European Unification dimension. The second is an interaction term which is the product of the multiplication between the visibility (or prominence) of EU in the news and that distance (coefficients B_5 and B_7 respectively in the model above).

In order to test the different techniques of linking the data, we develop 5 different sets of models. In each set we test newspaper and television effects separately. We first show the impact of our media content at the country level. In these models we are necessarily testing media effects as we have no indication of exposure to the media content but only use visibility at the country level as an indication of the ‘information environment’. The second set of models links media content at the outlet level but does not weight by days exposed. The third and fourth models show the different ways in which we link the content data to the respondents in the surveys. In the third set of models we link using the main newspaper or television news broadcast used weighted by days viewing/reading the outlet. The fourth set of models link across all outlets with each weight by the number of days of reported exposure. And finally in the fifth set of models, we show the same model as in three but using our measure of prominence.
Results

Tables 2a and 2b display the analysis from the five models that have been described above. On the whole the models perform as expected in terms of the control variables and with decent levels of variance explained. The focus here will be on the significance (and magnitude) of the interaction terms ($Distance_{EU\ Dimension}\*Visibility_{NP}$ and $Distance_{EU\ Dimension}\*Visibility_{TV}$) across the five different models as regards the ‘level of linkage’. On the face of it all but one of the interaction terms do not achieve acceptable levels of significance and the moderating effects seem to be pretty low. There is one case (model 2) where by the interaction exposure to television newscast does seem to produce a significant interaction effect, albeit small.

However, as Brambor et. al, (2005) note, the significance of interaction terms should be judged only after the marginal effect of the variable of interest (in this case the respondent’s distance from the governing party on the EU dimension) has been graphed over the values of the moderating variable (in this case EU visibility in the news). When performing this additional check we find that together with television exposure in Model 2, three more interaction terms seem to have statistically significant moderating effect. This is the case for both interactions from Model 3 and one interaction from Model 5. These graphs are presented in Figure 1 through Figure 4 below. We do not get a similar picture from Models 1 and Model 4 (graphs not shown). This is to be expected as Model 1 and 4 are admittedly the ‘weaker’ models in this review. First as noted before Model 1 does not vary across individuals and as such it is far from a Model that would approximate the ‘laboratory’ conditions that we are trying to, in a sense ‘recreate’, here.
On the other hand Model 4 might capture degree of exposure across individuals to some degree, but it fails to differentiate between them in the intensity of this exposure since it does not make enough of a distinction between an individual’s main source of information and all the other outlets. Admittedly we would expect Model 5 to perform a little better (possibly demonstrating sharper moderating effects and in both media instead of one) but this could be attributed to a combination of our measure of prominence and the way EU stories have been coded in newspapers. It might be worth revisiting this operationalisation of prominence in future drafts. The interaction effects that appear in the models and the graphs seem to be small. However, the there is some variation of this effect across the different sets of models and more importantly in accordance with our expectations.

[Figures 1-4 about here]
Conclusion

In this paper we hope to contribute to future efforts and choices regarding cross national research about public opinion and media effects. More generally, this contribution is related to methodology and the recent advances in the study of public opinion. The investigators of the European Election Study of 2009 have opted for a study design that ultimately gives the opportunity for a linkage of data collected from different units (manifestos, media content analysis, voter attitudes and behaviour). In the case of linking voters to the media content we are closer to capturing actual media exposure than any European Parliament survey has ever been in the past. This is done by having both the frequency of exposure to an actual media outlet and the actual news content of the same outlet. The benefit and the advancement in the study of media effects (such as priming) is therefore evident as we can in a sense recreate, as closely as it is possible in a survey, laboratory conditions by ‘varying’ the treatment/news exposure across individuals and countries.

We have demonstrated with the ‘priming’ example that the way we go about uncovering media effects is important. The opportunity to directly link actual consumption (outlet) with the respective content (in this case visibility) is invaluable. Being able to uncover the hypothesized effects suggests that the EES 2009 research design does indeed work and should be pursued further not only in future studies of European Parliament elections but in many other related cross national research on elections and public opinion.
References


Table 1. Exposure to Media Content in the 2009 European Election Studies

<table>
<thead>
<tr>
<th>Country</th>
<th>% Watching Coded News Broadcasts</th>
<th>% Reading Coded Newspapers</th>
<th>% Watch another broadcast more often</th>
<th>% Read other newspaper more often</th>
<th>TV Outlets Coded*</th>
<th>Newspaper Outlets Coded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>72.4</td>
<td>56.0</td>
<td>53.9</td>
<td>62.6</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Belgium</td>
<td>74.7</td>
<td>42.5</td>
<td>43.3</td>
<td>32.9</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>94.0</td>
<td>77.6</td>
<td>47.8</td>
<td>30.6</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Cyprus</td>
<td>84.0</td>
<td>57.5</td>
<td>49.6</td>
<td>26.0</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>96.2</td>
<td>84.5</td>
<td>25.7</td>
<td>27.7</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Denmark</td>
<td>91.9</td>
<td>36.6</td>
<td>42.2</td>
<td>61.6</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Estonia</td>
<td>71.0</td>
<td>53.2</td>
<td>40.6</td>
<td>41.7</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Finland</td>
<td>83.3</td>
<td>54.0</td>
<td>14.9</td>
<td>65.8</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>France</td>
<td>88.0</td>
<td>9.9</td>
<td>71.0</td>
<td>55.5</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Germany</td>
<td>84.2</td>
<td>28.5</td>
<td>54.8</td>
<td>73.5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Greece</td>
<td>81.7</td>
<td>38.5</td>
<td>50.1</td>
<td>41.5</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Hungary</td>
<td>83.3</td>
<td>28.4</td>
<td>59.6</td>
<td>48.4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Ireland</td>
<td>83.1</td>
<td>66.4</td>
<td>45.2</td>
<td>44.2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Italy</td>
<td>78.9</td>
<td>40.4</td>
<td>57.7</td>
<td>43.2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Latvia</td>
<td>74.2</td>
<td>32.2</td>
<td>66.6</td>
<td>53.7</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Lithuania</td>
<td>90.4</td>
<td>50.8</td>
<td>49.8</td>
<td>45.2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>61.7</td>
<td>73.6</td>
<td>78.0</td>
<td>32.9</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Malta</td>
<td>80.1</td>
<td>46.8</td>
<td>63.9</td>
<td>32.4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Netherlands</td>
<td>96.3</td>
<td>84.2</td>
<td>41.7</td>
<td>68.6</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Poland</td>
<td>94.7</td>
<td>75.8</td>
<td>36.7</td>
<td>35.2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Portugal</td>
<td>78.3</td>
<td>38.3</td>
<td>56.7</td>
<td>32.4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Romania</td>
<td>78.3</td>
<td>25.7</td>
<td>68.2</td>
<td>32.3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Slovak Republic</td>
<td>90.0</td>
<td>64.5</td>
<td>38.9</td>
<td>19.1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Slovenia</td>
<td>97.9</td>
<td>89.7</td>
<td>19.5</td>
<td>43.0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Spain</td>
<td>88.3</td>
<td>72.2</td>
<td>58.7</td>
<td>60.9</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Sweden</td>
<td>92.4</td>
<td>81.1</td>
<td>39.4</td>
<td>72.3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>68.4</td>
<td>38.3</td>
<td>49.1</td>
<td>57.3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>63.2</td>
<td>42.3</td>
<td>49.0</td>
<td>45.9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The sample size for all columns is 27,076.

* In Belgium, 2 French and 2 Flemish broadcasts were coded in addition to 3 French and 3 Flemish newspapers. Therefore the total is actually 4 TV outlets and 6 newspapers but these are broken down by language and constitute similar numbers to other countries.
Table 2a. Cross-national Media Priming Effects - OLS analysis of Probability of Voting for Governing Party

<table>
<thead>
<tr>
<th>Country Level Effects</th>
<th>Outlet Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Visibility as Measured at Country Level (Model 1)</td>
</tr>
<tr>
<td></td>
<td>Newspapers</td>
</tr>
<tr>
<td>(0.230)</td>
<td>(0.230)</td>
</tr>
<tr>
<td>Distance Left Right</td>
<td>-0.322***</td>
</tr>
<tr>
<td>(0.0209)</td>
<td>(0.0209)</td>
</tr>
<tr>
<td>Retrospective Economic Evaluations</td>
<td>0.160***</td>
</tr>
<tr>
<td>(0.0517)</td>
<td>(0.0516)</td>
</tr>
<tr>
<td>Government Approval</td>
<td>1.605***</td>
</tr>
<tr>
<td>(0.219)</td>
<td>(0.219)</td>
</tr>
<tr>
<td>Distance EU Dimension</td>
<td>-0.0661**</td>
</tr>
<tr>
<td>(0.0280)</td>
<td>(0.0153)</td>
</tr>
<tr>
<td>Visibility</td>
<td>0.008*</td>
</tr>
<tr>
<td>(0.004)</td>
<td>(0.00561)</td>
</tr>
<tr>
<td>Distance EU Dimension*Visibility NP</td>
<td>0.0001</td>
</tr>
<tr>
<td>(0.000667)</td>
<td>(0.0008)</td>
</tr>
<tr>
<td>Distance EU Dimension*Visibility TV</td>
<td>-0.00007</td>
</tr>
<tr>
<td>(0.000959)</td>
<td>(0.0007)</td>
</tr>
<tr>
<td>Constant</td>
<td>3.828***</td>
</tr>
<tr>
<td>(0.274)</td>
<td>(0.207)</td>
</tr>
</tbody>
</table>

R² (overall) | 0.45 | 0.45 | 0.47 | 0.46 | 0.45 | 0.45 |
Observations  | 24,968 | 24,968 | 10796 | 15989 | 16,642 | 17,353 |
Number of groups | 27 | 27 | 27 | 27 | 27 | 27 |

Notes. *p < .10, **p < .05, ***p < .01, two-tailed test; Random Effects estimation performed in Stata 11 using the ‘xtreg’ command. Robust standard errors are in parentheses.
Table 2b. Cross-national Media Priming Effects - OLS analysis of Probability of Voting for Governing Party

<table>
<thead>
<tr>
<th>Outlet Level</th>
<th>Visibility as Measured on All Outlets weighted by days watching/reading (Model 4)</th>
<th>Prominence as Measured on Main outlet weighted by days - Both Outlets (Model 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Newspapers</td>
<td>Newspapers</td>
</tr>
<tr>
<td></td>
<td>TV</td>
<td>TV</td>
</tr>
<tr>
<td>Party Identification</td>
<td>4.191*** (0.246)</td>
<td>4.245*** (0.229)</td>
</tr>
<tr>
<td>Distance Left Right</td>
<td>-0.318*** (0.0202)</td>
<td>-0.325*** (0.0221)</td>
</tr>
<tr>
<td>Retrospective Economic Evaluations</td>
<td>0.174*** (0.0563)</td>
<td>0.148*** (0.0547)</td>
</tr>
<tr>
<td>Government Approval</td>
<td>1.618*** (0.224)</td>
<td>1.584*** (0.222)</td>
</tr>
<tr>
<td>Distance EU Dimension</td>
<td>-0.0554*** (0.00857)</td>
<td>-0.0714*** (0.0127)</td>
</tr>
<tr>
<td>Visibility</td>
<td>0.000394*** (0.000140)</td>
<td>0.000039 (0.0000727)</td>
</tr>
<tr>
<td>Distance EU Dimension*Visibility NP</td>
<td>-0.00006 (0.00005)</td>
<td>-.000057 (0.000412)</td>
</tr>
<tr>
<td>Distance EU Dimension*Visibility TV</td>
<td>-0.00006 (-0.00009)</td>
<td>-0.00006 (-0.00008)</td>
</tr>
<tr>
<td>Constant</td>
<td>4.138*** (0.159)</td>
<td>4.194*** (0.171)</td>
</tr>
<tr>
<td>R² (overall)</td>
<td>0.44</td>
<td>0.44</td>
</tr>
<tr>
<td>Observations</td>
<td>18,297</td>
<td>21,594</td>
</tr>
<tr>
<td>Number of groups</td>
<td>27</td>
<td>27</td>
</tr>
</tbody>
</table>

Notes. *p < .10, **p < .05, ***p < .01, two-tailed test; Random Effects estimation performed in Stata 11 using the ‘xtreg’ command. Robust standard errors are in parentheses.
Figure 1. Marginal effect of EU attitudes over values of visibility (Television Model 2)

Graphs were constructed using the ‘grinter’ command in Stata11

Figure 2. Marginal effect of EU attitudes over values of visibility (Television Model 3)

Graphs were constructed using the ‘grinter’ command in Stata11
Figure 3. Marginal effect of EU attitudes over values of visibility (Television Model 3)

Graphs were constructed using the ‘grinter’ command in Stata11

Figure 3. Marginal effect of EU attitudes over values of visibility (Television Model 5)

Graphs were constructed using the ‘grinter’ command in Stata11