

A Big Bird Effect? The Interaction among Public Broadcasting, Public Subsidies and Political Knowledge¹

By

Patrick O'Mahen

University of Michigan

pomahen@umich.edu

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Several memorable moments of the 2012 U.S. presidential election involved heated arguments over a large yellow puppet. During the first candidate debate, PBS journalist Jim Lehrer challenged former Massachusetts governor and Republican nominee Mitt Romney to state specific ways he would reduce the federal budget deficit. Romney replied he would eliminate government funding for public broadcasting. He added that the cuts needed to happen despite his respect for the popular children's show *Sesame Street* character Big Bird:

I'm sorry, Jim, I'm going to stop the subsidy to PBS.... I like PBS, I love Big Bird.... [But] I'm not going to keep on spending money on things to borrow money from China to pay for. That's number one.²

Romney's proposal set off a storm of protest among PBS partisans across the United States. However, his remarks raise a legitimate public policy issue. In fiscal year 2009, the U.S. Corporation for Public Broadcasting received \$400 million in federal appropriations.³ Public broadcasters in other countries receive far greater amounts. For example, the Canadian Broadcasting Corporation received US \$925 million in government support for operating subsidies alone that year,⁴ while the British Broadcasting Corporation took in US \$6.45 billion in subsidies for 2008.⁵ Romney's question is simple: Does a country get anything for that taxpayer money that commercial broadcasting cannot provide? This analysis gives two answers: First, public broadcasting subsidies create better informed citizens, and second, subsidies provide more equally informed citizens.

The citizenry of the United States, for example, lags notably behind its peers in political knowledge. Some studies show that Americans with university degrees know less about public

² (Commission on Presidential Debates 2012)

³ (Corporation for Public Broadcasting 2012)

⁴ (CBC-Radio Canada 2009)

⁵ (BBC 2008)

affairs than western Europeans who have completed the equivalent of an American high-school education.⁶ Scholars note that news coverage directly influences political knowledge,⁷ but while valuable, this work does not address the media institutions that help shape the amount and style of coverage. Some recent work usefully analyzes the influence that the size of the public broadcasting sector has on political knowledge,⁸ but does not offer a distinct definition of what “public broadcasting” is or distinguish the institutional structures that would make public broadcasting more effective than commercial broadcasters at providing political knowledge.

I build on this previous work by identifying structures that differentiate public broadcasters from commercial broadcasters and analyzing the effects that those structures have on political knowledge. The key insight is that public broadcasters that rely on government subsidies are able to break out of the shareholder-profit model embraced by commercial broadcasters. This consistent revenue stream allows them to focus on goals other than attracting the largest audience and provide more political coverage. This in turn creates higher levels of political knowledge among viewers of public broadcasting and works to blunt knowledge variations created by differences in class, gender and political interest.

Do citizens need political information?

It seems logical that citizens need information to hold leaders accountable, but some scholarship challenges the premise that information helps people make political decisions. Several seminal works show that the majority of citizens possess little political knowledge. Instead, they suggest that most voters use party affiliation as a filter through which to make political decisions, limiting the role political information plays in decision-making⁹. Since then,

⁶ (Dimock and Popkin 1997)

⁷ (Barabas and Jerit 2009)

⁸ (Iyengar, et al. 2010); (Baek 2009)

⁹ (Converse 1964); (Campbell, et al. 1960)

many political scientists have argued that low-information voters make use of similar cues and act as they would as if they were high- information voters.¹⁰ Finally, still other scholars, notably Page and Shapiro have argued that low-information voters do not matter because their choices amount to random noise that does not interfere with the true preference of the electorate.¹¹

However, even this work acknowledges that *some* political information is necessary for a voter to make her preferred choice. Lupia argues that cues offer shortcuts, but recognizes voters need knowledge of the cue in order to effectively use the shortcut.¹² This need is especially vital when political leaders manipulate policy proposals to hide their true costs for voters.¹³

Furthermore, other research challenges the ideas that cues allow low-information voters to behave like their more knowledgeable counterparts. Bartels simulates the results of six American presidential elections by imputing low-information voters with the knowledge characteristics of their highly informed demographically similar counterparts. He finds that individual vote choice probabilities shift by 10 percentage points. Nor do the individual effects cancel out over the entire electorate.¹⁴ Other work finds that high-information citizens in the United States are more likely to express policy preferences than low-information ones. Imputing high levels of knowledge to all voters leads to significant shifts of public opinion on fiscal policy, reflecting the new weight of low-information voters, who tend to be poorer.¹⁵ Field experiments also suggest that citizens' beliefs change based on their levels of political knowledge.¹⁶

The media as the source of political information

¹⁰ (Lupia and McCubbins 1998); (Lupia 1994); (Sniderman, Brody and Tetlock 1993); (Lupia 1992)

¹¹ (Page and Shapiro 1992)

¹² (Lupia 1994, 67)

¹³ (Bartels 2005); (Hacker and Pierson 2005)

¹⁴ (Batels 1996)

¹⁵ (Althaus 1996)

¹⁶ (Luskin, Fishkin and Jowell 2002); (Fishkin 1996)

If people need information to make political decisions, what sources do they use? In mass publics, it is impossible for all citizens to deliberate simultaneously. Instead professional journalists organize and report political information of national importance for general consumption.¹⁷ Survey data show many individuals report receiving political information from the media. Print media retains influence among certain sectors of the media, especially in northern European countries. Internet news consumption is increasing rapidly in industrialized countries, especially among younger viewers. However, television remains the mass media of choice for the vast majority of residents of industrialized democracies, as the Eurobarometer data presented in Table 1 show. Surveys in the United States show since the early 1960s that a majority of respondents have reported getting their political information from television.¹⁸

Table 1: Percentage of Respondents Who Get News about the European Union from a Given Medium¹⁹

Country	Newspapers	Television	Radio	Internet	N
France	40.1	75.3	36.3	22.1	1,031
Germany	60.3	79.4	46.6	22.0	1,531
Italy	36.2	69.0	14.6	12.6	1,044
Poland	30.3	74.9	46.6	22.9	1,024
Spain	33.9	67.1	24.1	9.5	1,019
Sweden	68.9	76.3	42.2	38.4	1,012
Turkey	42.0	87.6	20.5	6.3	1,005
UK	34.7	45.2	19.9	26.7	1,362

However, because people report getting most of their political information from television does not mean they gain knowledge from watching.²⁰ Exposure to print media indicates active attention from the reader, which contrasts with the ability to passively watch television.

¹⁷ (Page 1996)

¹⁸ (Chafee and Kanihan 1997)

¹⁹ (Papacostas 2010)

²⁰ (Patterson and McClure 1976)

Accounting for attention increases exposure's effect on knowledge,²¹ though newspaper exposure is still a stronger predictor.²² Finally, some types of television news have larger effects. Robinson and Levy note that mainstream American TV news has small or no positive impacts on knowledge when controlling for demographic variables. However, watching PBS's MacNeil/Lehrer News Hour is associated with positive changes in political knowledge as large as those acquired by reading newspapers.²³

What is political knowledge?

Survey researchers in the United States have examined political knowledge since the 1940s. Early work by Converse and his contemporaries focused their analysis on the concept of political ideology, which they defined as citizens' ability to relate their beliefs on individual issue domains together into a coherent political philosophy.²⁴ Later critics rethought the ideological focus and also moved to untangle many discrepancies of what constituted political knowledge across studies. Reformers suggested a renewed focus on measurement and a more thorough development of the concept of political knowledge or sophistication Luskin in particular suggested a unifying concept of political sophistication,²⁵ which many following commentators either explicitly adopted or implicitly accepted.²⁶ Political sophistication for Luskin is the unification of three distinct concepts. The first concept is the amount of raw knowledge, or more precisely, the raw number of political facts a person possesses. Second is the range of domains across which a citizen possesses facts. Political ideology, he claims, stems from the third concept, which is the number of connections between facts.

²¹ (Chaffee and Schleuder 1986)

²² (Robinson and Levy 1996)

²³ (Robinson and Levy 1996)

²⁴ (Converse 1964)

²⁵ (Luskin 1987)

²⁶ See for example (Delli Carpini and Keeter 1993)

This unifying concept of political sophistication sheds light on the third of my original questions. Recognizing a country's vice president clearly falls under the first component of political sophistication. However, the positive relationship between the three components actually makes the measure of individual political facts relevant for a broader measure of political knowledge. Increasing the number of connections between facts – or the constraints, as Luskin puts it– helps organize the brain's recall mechanisms more efficiently, allowing politically sophisticated individuals the ability to recall more facts.

We next face the question of precisely *which* facts are most important to developing political sophistication. To go back to the hypothetical example above, which fact is a better measure of relevant political information: a citizen knowing who the Vice President is, or the person understanding that the Supreme Court can rule on the constitutionality of laws?

In addition to the question of relative importance, we also need to grapple with the idea raised by Luskin that political knowledge spans more than one domain. Extending above example, we might theorize that questions regarding the identity of national office holders (who is the Vice President?) and those measuring understanding of institutional structures (What does the Supreme Court do?) actually measure separate dimensions of political knowledge.

Delli Carpini and Keeter tackle both of these questions in their own work on political knowledge.²⁷ First, they develop an idea of what important political knowledge is. Drawing from decades of research and theorizing on U.S. civic values, as well as a survey of experts, the pair theorizes that citizens should understand four fundamental concepts in order to be considered politically sophisticated:

²⁷ (Delli Carpini and Keeter 1993)

1. Leaders: Because democracy involves citizens choosing their leaders, potential voters ought to know who their leaders are and what they stand for (and/or what political party they represent) in order make effective decisions.
2. Institutions: Citizens should recognize the basic political institutions of a polity. These include both formal institutions like the U.S. Supreme Court, but also political values like shared norms of citizen participation or the two-party system
3. Current political alignments: The knowledge of what party and leaders control which institutions provide specific context of policymaking.
4. Political history and political economy: These two provide a general context for understanding policymaking in a country.

Developing a Theory of Broadcasting Outlets and Political Knowledge

I now turn to the relationship between publicly funding broadcasters and political knowledge. First, I outline relevant portions of Zaller's theory of media politics. Next, I develop a working definition of a public broadcaster to account for the influence that public funding and regulations have under Zaller's theoretical framework. Finally, I derive and test predictions that increasing public funding levels for broadcasting will lead to higher levels of political knowledge among citizens, using Eurobarometer data.

Commercial Competition and News Coverage

Though relatively large numbers of Americans report to paying attention to political news, scholars suggest that a significant portion of the individuals who say they pay attention and want more in-depth news rarely watch available political news.²⁸ The results of this research lead to the conclusion that citizens prefer entertainment to public affairs programming. As a result, when

²⁸ (Neuman 1991); (Graber 1984)

media firms make decisions about programming to improve circulation or ratings, they tend to cut news and public affairs offerings (Bennet 1996).²⁹

Circulation provides two primary sources of income for media companies: subscriber fees and advertising. Subscriber fees are important for print publications and pay television, while advertising is relied on by most free-to-air broadcast commercial television channels. Larger circulations and greater ratings points increase the number of people that advertisers can reach, increasing rates and revenue for media outlets. Examples include the “big three” networks of ABC, NBC and CBS in the United States, ITV in Britain and CTV in Canada.

Because the public chooses to avoid political news, funding media outlets through advertising and subscriber fees creates incentives to reduce public affairs coverage. Increasing competition exacerbates pressure. Zaller finds clear evidence of this trend: He notes that American managers have drastically decreased the time dedicated to public affairs in the news programs of local TV stations since 1960. In contrast, the consolidation of the newspaper market has left one major daily in most cities in the United States. Here the remaining daily has retained stronger coverage of political news. The process is reversed in Great Britain, where a cut-throat national newspaper market delivers inferior public affairs coverage in comparison to what was until recently a relatively controlled competition between the BBC and ITV³⁰ (Zaller n.d., 37-52). But with increasing competition starting in the 1990s, ITV has drastically cut its political hard news broadcast at the expense of entertainment programming and “softer” news. (Iyengar, et al. 2010).

Enter the Public Broadcaster

²⁹ (Bennet 1996)

³⁰ (Zaller n.d., 37-52)

This logic depresses civic-minded reformers: non-interest in government conspires with commercial funding to eliminate in-depth coverage and intelligent discussion of public affairs from television. But advertising isn't the only way to fund a television network. Differing sources of funding might have large influences on the programming content. That different content in turn translates into effects on individual levels of knowledge. The implication is that public broadcasting might have large effects on political knowledge.

What is public broadcasting? Past scholarship on the effects of public broadcasting merely provides a fuzzy definition. Most definitions note that there is an element of state regulation or ownership implied by public broadcasting. For example, Hallin and Mancini state that public broadcasting is perhaps the most important form of 'state intervention' in the media.³¹ Djankov et al. examine patterns of media ownership among newspapers and television outlets in 97 countries of varying countries and uses majority ownership to determine whether or not a system is public or private.³² Baek later uses these classifications as a way to determine whether or not markets dominated by public broadcasting increase political knowledge.³³

But noting that public broadcasting involves state intervention lacks completeness. State intervention is not public broadcasting. For example, Hallin and Mancin identify regulations like libel, right-of-reply and shield laws that are not necessarily associated with public broadcasting.³⁴ And Djankov et al's reliance on state ownership to define public media seems naïve. They note that state ownership differs between democratic United Kingdom and the military dictatorship of

³¹ (Hallin and Mancini 2004, 41)

³² (Djankov, et al. 2003)

³³ (Baek 2009)

³⁴ (Hallin and Mancini 2004, 43)

Myanmar,³⁵ but then fail to accommodate distinctions when they analyze the effects of state-owned media.

Alas, much scholarship seems to use a conception of public broadcasting that borders on former American Supreme Court Justice Potter Stewart's definition of pornography: they know it when they see it. For example, Iyengar et al's recent work identifies PBS, the BBC and certain TV stations in Denmark and Finland and Switzerland as public broadcasters.³⁶ Though their classifications are defensible, their lack of clear definition of private and public muddles scholarship.

To bring some clarity, I identify three key components to delineate a public broadcaster from a commercial broadcaster.

1. *Public broadcasters are non-profit.* There are other purposes to develop a broadcaster unrelated to the narrow financial well-being shareholders. Television has the power to entertain, to inform, to educate, to provide cultural exposure and to preserve and encourage the use of indigenous languages. When developing television, most governments placed special emphasis on these alternative goals.
2. *Public broadcasters have broad government involvement in their management, though not necessarily direct government ownership or funding.* The BBC, for example, was a public corporation, though it now is officially a non-profit trust, and the governing board is appointed by Parliament. One German public broadcaster, ZDF is managed by a board appointed by the national parliament, while its counterpart ARD, is a national network composed of broadcasters run by regional governments.

³⁵ (Djankov, et al. 2003, 353)

³⁶ (Iyengar, et al. 2010)

3. *Though there is a great deal of government involvement, public broadcasters have some sort of insulation from direct interference from the government of the day.* This part of the definition sets public broadcasters apart from state broadcasters. All public broadcasters have a charter or legal guarantee that provides editorial independence from the government. Beyond the charter, insulation takes a wide variety of forms, and many broadcasters use multiple methods. One provides an independent stream of funding that is renewed for long-term contracts. The BBC, for example is funded by a license fee on all television owners. Other insulating measures include long-term appointments to the board of directors (so as not to overlap with the government of the day), providing proportional representation (giving multiple parties and interest groups cross-cutting leverage on the board), having staggered appointments, or requiring a parliamentary supermajority to appoint board members to the broadcaster.

Follow the Money

Despite their non-profit goals that diverge from their commercially oriented counterparts, public broadcasters still require large amounts of capital. I predict that the operating cash source will be a critical determinant of the type of programming a public broadcaster airs, and the resulting level of political knowledge in its coverage area. On one end of the spectrum are public broadcasters that, at least in theory, earn all of their funding from selling advertising. Among industrialized democracies, Spain's TVE and Portugal's RTE are the two most notable examples. On the other end of the spectrum are countries whose revenues come entirely from the government. License fees charged to all television set owners provide nearly all of the funding for British BBC, the Norwegian NRK and the Swedish SVT. In the middle are countries whose

public broadcasting revenue sources are split between government funding and advertising, like the Canadian CBC, the Italian RAI and the Irish RTE.

Public broadcasting outlets without any of the insulation that government funding provides should behave similarly to commercial broadcasters in their programming decisions because they are subject to very similar pressures that commercial broadcasters are. Therefore, these outlets should provide similar amounts of political information as commercial outlets. In turn, viewers of these outlets should end up with similar levels of political knowledge as viewers of commercial broadcasters.

However, broadcasters with partial or complete insulation from commercial pressures ought to provide a greater amount of political information (in line with the goals of their charters to educate and inform the population). This reality has been observed by several researchers.³⁷ In turn, this information-rich environment will diffuse into viewers and increase political knowledge, as numerous scholars have shown.³⁸

To sum up, public broadcasting only helps to increase levels of public knowledge if it has a significant non-advertising funding source. I call this prediction the “subsidy hypothesis”. The subsidy hypothesis advances our understanding of the debate over public broadcasting. Instead merely debating the effects of public and private broadcasting on political knowledge or participation, the logic I outline here helps isolate moving parts of public broadcasting and specify a more precise mechanism for how it works.

³⁷ (Iyengar, et al. 2010); (Brants 2004)

³⁸ (Iyengar, et al. 2010); (Jerit and Barabas 2006); (Zukin and Snyder 1984) Also useful on this point is Crissell’s discussion of the degradation of Britain’s Independent Television News when internal policies at ITV shifted the news division from a subsidized part of the corporation to a division that needed to show a profit (Crissell 1997). Similar trends have occurred in the news divisions of American networks as well.

Additionally, I posit that the information-rich environment provided by subsidized public broadcasters will level the gap in knowledge between those citizens who are very interested in politics and those who are not.³⁹ I expand this logic to suggest that subsidized public broadcasters will also decrease the knowledge gap that exists between high- and low-income individuals, as well as those of different education levels.⁴⁰ Finally, I also hypothesize that subsidies will narrow the gender gap in knowledge that exists between men and women identified by several scholars.⁴¹ I call this general leveling effect the “neutralization hypothesis.”

Cases and Data

Western Europe makes an ideal place to test these hypotheses. Fourteen of the region’s members are both in the European Union, therefore surveyed by the Eurobarometer, and have a national public broadcaster. The Eurobarometer fits this project well because it contains large representative national samples for each EU country, which allows analysis of both within-country and cross-national variation. While developing this project, I reviewed every survey fielded by the organization between 1970 and 2010 to check for measures that would allow me to test my hypotheses on public broadcasting consumption and political knowledge. After an initial cursory review, I catalogued potential political knowledge questions in 22 waves of the study. Following this analytical process, I determined that two studies, 52.0⁴² and 65.2⁴³, provide workable measures of media consumption, political knowledge and other individual-level socioeconomic data needed to test the subsidy and neutralization hypotheses.

Measuring Knowledge

³⁹ (Iyengar, et al. 2010)

⁴⁰ (Robinson and Levy 1996)

⁴¹ (Mondak and Anderson 2004); (Nadeau and Niemi 1995)

⁴² (Melich 1999)

⁴³ (Papacostas 2006)

Several hurdles complicate evaluating political knowledge in a comparative context. The first issue is creating questions of similar difficulty across countries. The simplest solution might seem to ask the same question across a variety of countries. However, the importance of the same questions varies in different countries. For a citizen of Botswana, for example, knowing the president of Botswana is a basic measure of political competence, as the figure plays a large role in what goes on in Botswanan lives. However, from the French perspective, the president of Botswana is a marginal figure with little impact. So it would be inappropriate to conclude Botswanans knew more about politics because they could identify their president more often than the French.

A second difficulty is developing a consistent survey design across countries. For example, it might be inappropriate to directly compare political knowledge between the United States and Canada by comparing outcomes of the Canadian Electoral surveys and the American National Election studies. Though both studies meet high standards of professionalism and rigor, differences in survey design make it suspect to compare values. Differences in survey method (e.g. telephone vs. face-to-face vs. internet) and answer structure (Are answers closed or open-ended? Do interviewers push respondents to guess?) can affect response structures in ways beyond simple knowledge measurement. Researchers need to take care when they use two different national surveys to directly contrast knowledge or public opinion.

The Eurobarometer partially overcomes these obstacles. First, researchers specifically design the survey to measure the attitudes of its member states' citizenry toward the EU and EU policy. Therefore most of the knowledge questions investigate facts about political institutions common to all member states. For instance, one question asks respondents to identify the president of the European Commission. The president represents all EU members; the question

should represent a similar level of difficulty for all citizens of EU countries. A second measure asks respondents to identify the finance minister of their national government. Because the finance minister is usually one of the two or three most important members of a cabinet, asking respondents to identify the finance minister should yield comparable measures across countries.

The 1999 Eurobarometer asks respondents four questions regarding their knowledge of political leaders, a key dimension of political knowledge (Delli Caprini and Keeter 1993).⁴⁴ Two questions focus on EU-level policymakers and ask respondents to identify their own country's appointed representative on the European Commission as well as the Commission's president. Two other questions evaluate the respondents' knowledge of domestic political leaders. The first asks respondents to identify their country's finance minister and the second inquires about the identity of the foreign minister. Because these two positions are generally the most prestigious cabinet positions after the office of Prime Minister, a similar percentage of citizens would identify the occupants of these offices in different countries, all else equal.

Instead of focusing on political leaders, the 2006 version of the Eurobarometer contains items that assess respondents' knowledge of the political institutions of the European Union, another relevant dimension of political knowledge. The survey uses two true-false questions regarding the number of EU members and whether or not the European Parliament has direct elections. A third true-false question asks respondents if the EU spends a majority of its budget on administrative costs.

To adapt these knowledge measures to my purposes, I score correct answers as "1", and incorrect answers and "don't know" answers as "0". I then group the scores on each question into an additive index of political knowledge, which is a five-point index for the 1999 data and a four-point one for the 2006 data. Higher scores indicate greater political knowledge. Since these

⁴⁴ (Delli Carpini and Keeter 1993)

items vary in terms of difficulty, we would not expect the answers to be highly correlated and therefore the index is closer to a Guttman scale, with those able to correctly answer the most difficult questions also able to answer less difficult ones.

Measuring Media Systems

The critical variable is the public broadcasting funding source for the 14 countries in my data set. Ideally, I would be able to use a continuous measure to delineate among various levels of subsidy. For example, I would code a country whose public broadcaster derives 57 percent of its funding from government subsidies as 0.57. However, information is not readily available for more than half of the 14 countries I examine here during the years I use in my analysis.

Therefore, I dichotomously operationalize this country-level variable. Countries that fund their entire public broadcasting system through advertising score “0”, while countries that subsidize their public broadcasters score “1”. Here, I use a generalized definition of public subsidies; systems funded at least in part by a dedicated license fee, sales taxes or general government revenues get classified as subsidized systems. Neither Spain nor Portugal subsidized their systems during the time period of this study (Portugal provided subsidies until 1990, while Spain began primarily funding its public broadcaster, RTVE, with public funds in 2011). The other 12 countries provided their public broadcasters with a considerable amount of government funding, ranging from about 45 percent of revenues for the Irish and Italian broadcasters (RTE and RAI respectively,) to about 95 percent of the revenues for the British and Swedish public broadcasters (the BBC and SVT). I call this variable “subsidy.”

Subsidies give public-service broadcasters financial space to provide superior public affairs programming without having to please advertisers with ratings. As a result, countries that subsidize their public broadcaster should see elevated knowledge scores among its general

public. Individual viewership of public broadcasting also however plays a key role in enhancing the effect of subsidies; the best public affairs programming will have minimal effects on a person who does not watch it. Therefore, part of the subsidy hypothesis predicts that viewers of public broadcasting in countries with subsidies will display the largest knowledge gains.

Measuring Media Use

Both surveys contain reasonably detailed measures of media consumption, including television use. However, I predict that a difference in question wording between the two surveys will create different results between the two studies. The 2006 study requests that respondents to identify the specific television channels they spend some time watching five days a week or more. This method is merely a measure of *exposure*, which is only slightly correlated with political knowledge. The 1999 survey asks a more specific version, inquiring which TV channels respondents watch regularly for *news* programs. Since news is one of the major providers of political information on the air waves and the 1999 question is asking which channels respondents watch to encounter news, this item measures *attention*, which is more strongly correlated with knowledge.⁴⁵ As a result, the 1999 question is a much better measure to determine any connections between public broadcasting and political knowledge.

I use the difference in question wording to my advantage. My theory implies that that quality and the quantity public affairs programming (of which news is a major example) drive political knowledge gains among the population. Subsidies to public broadcasters play a critical role because they allow those broadcasters to provide more and better news content. Therefore only questions that directly tap attention and exposure to public affairs programming will show the differences in these types of programs across public and commercial broadcasters have on the

⁴⁵ (Chaffee and Schleduer 1986)

public's political knowledge, given a level of subsidization. Therefore, I predict that the 1999 wording of the question will generate the predicted interactive effects, while the 2006 version will generate null results or greatly muted effects.

Other than this fundamental difference in the question, the measurements in 1999 and 2006 are conveniently identical: They provide respondents with a list of television channels generally available to them in their viewing area and ask which ones they watch five days or more per week. When combined with a list of public and private television channels among the 14 countries tested in this study, these questions serve as a useful foundation to divide citizens who watch primarily public television from those who watch private stations. Using a multistep process, I developed a dichotomous measure indicating those who view some public television and those who report watching none at all. First, I identified each television outlet, roughly a dozen in each of the 14 countries, as commercial or public service. From there, I coded each respondent's television consumption. Any respondent who reported watching a public television station regularly scored "1" and those who report only watching private television stations as a 0. People who reported watching no television were recoded as missing values. Individuals who reported watching public television channels that were not from their home country were coded as "1" only if the public television channel was broadcast in the same language. For example, an Irish viewer of the BBC and an Austrian respondent who watched the German ARD or ZDF would be coded as a "1," while a Swedish viewer of the BBC who did not watch any Swedish-language public television networks would be coded as a "0." Because the vast majority of viewers of foreign public broadcasting also reported watching their domestic public broadcasters, this rule affects the coding on only several dozen of nearly 25,000 respondents.

Country	Year	Public	Private	Missing	Total N
Austria	1999	89.2 (%)	3.1	7.7	1,018
	2006	93.0	5.0	2.0	1,017
Belgium	1999	67.0	25.2	7.8	1,044
	2006	81.3	15.6	3.1	1,020
Denmark	1999	96.9	.6	2.5	1,001
	2006	88.1	9.1	2.8	1,008
Finland	1999	59.5	27.9	12.6	1,015
	2006	78.3	16.6	5.1	1,006
France	1999	58.5	32.5	9.0	1,003
	2006	66.5	28.0	5.5	1,020
Germany (west)	1999	79.8	10.4	9.8	1,018
	2006	74.4	20.6	5.0	1,016
Greece	1999	24.3	74.2	1.5	1,010
	2006	49.9	46.9	3.2	1,000
Ireland	1999	91.3	1.2	7.5	1,001
	2006	90.1	7.8	2.1	1,003
Italy	1999	83.2	15.6	1.2	1,010
	2006	77.5	17.5	5.0	1,000
Netherlands	1999	84.5	12.3	2.8	1,010
	2006	84.0	10.4	5.6	1,009
Portugal	1999	56.1	37.9	6.0	1,001
	2006	47.1	50.5	2.4	1,002
Spain	1999	58.9	30.6	10.5	1,000
	2006	64.2	30.8	5.0	1,005
Sweden	1999	74.1	21.9	4.0	1,000
	2006	86.2	10.2	3.0	1,017
Great Britain	1999	63.6	29.3	7.09	1,002
	2006	88.2	7.7	4.1	1,002

I call this measure, shown in Table 2, “public viewership.” Note, however that the public viewership variable does not provide a particularly fine-grained measure of exposure: the surveys do not ask detailed questions regarding time spent watching each channel; nor do they track television viewing through diaries or direct measurement like a ratings agency does. Table 2 shows the results of this coding scheme and merits several observations. First, in each Western European country except Greece, a majority of respondents reports watching public television. These results do not represent the “share” of public broadcasting – the percentage of households watching television tuned in to public broadcasting at any given instant. Instead, the measure

shows the “reach” – a statistic that denotes how many households actually tune into public broadcasting at least occasionally during a given period of time, usually measured as a week or month. Second, despite the clear majority who views at least some public broadcasting, each country has enough variation to conduct meaningful statistical tests. Finally, at least 90 percent of the respondents in each country report watching at least some television, indicating that meaningful sample sizes remain to test the relationship between public viewership and political knowledge for each country.

Socioeconomic and Demographic Variables

To test the neutralization hypothesis that increased public broadcasting subsidies decrease the influence of socioeconomic variables on political knowledge, I incorporate measures for several individual-level variables known to correlate with political knowledge in past studies: political interest, gender, education and socioeconomic status.

Much political science work claims a strong relationship between interest in politics and political knowledge. Zaller suggests the theoretical importance that individual interest plays in political knowledge when he claims that most Americans do not pay much attention to politics and rely on the news media to report only the most important political events.⁴⁶ Other than that, they wish to be left alone. Implicitly, then, this logic assumes that a minority of interested citizens will be more interested in politics and thereby have more knowledge of political events. This assumption plays into cognitive shortcuts: Instead of reading hundreds of pages of commentary to inform themselves on issues, voters base their own decisions from the stances that major organized interest groups take.⁴⁷ Presumably, however, more interested citizens will do more research and have more political knowledge. It also seems that a measure of political

⁴⁶ (Zaller n.d.)

⁴⁷ (Lupia 1994)

interest captures at least some of the positive effect that partisan affiliation has on basic levels of political knowledge first found by Converse.⁴⁸

I use a single question from the Eurobarometer inquiring how often respondents discuss politics with friends to measure levels of political interest. The item contains three response choices: never, occasionally or frequently, which I code 0, 1 and 2 respectively. Therefore the political discussion variable should have a positive relationship with political knowledge. This measure matches one part of the two-item index that Iyengar and his colleagues use in their 2010 study on public broadcasting.⁴⁹

Gender also correlates with political knowledge. Men on average have higher levels of political knowledge than women, even when controlling for income and education.⁵⁰ Mondak and Anderson argue that a large proportion of this difference is an artifact of women being more likely to say they do not know an answer to a question than men, who often guess – and thus have a chance of correctly answering the question.⁵¹ Since most of the work on political knowledge has tended to treat “don’t know” answers as the equivalent of incorrect answers, women may be unfairly penalized on their political knowledge scores. Mondak argues that interviewers should encourage all respondents to take their best guess to cut down on the number of respondents answering ‘don’t know.’⁵² However, the Eurobarometer freely accepts ‘don’t know’ as an answer option. Since I count ‘don’t know’ as an incorrect answer, controlling for gender also helps neutralize respondents’ differing propensities to guess. In this analysis, gender is a dichotomous variable with males assigned a score of “1” and females scored as a “0.” Due to this coding, gender should have a strong positive relationship with political knowledge.

⁴⁸ (Converse 1964)

⁴⁹ (Iyengar, et al. 2010)

⁵⁰ (Nadeau and Niemi 1995)

⁵¹ (Mondak and Anderson 2004)

⁵² (Mondak 2001)

Education is also important. Highly educated individuals tend to have a larger storehouse of facts on which to draw and superior training in making connections between those facts, which is the foundation of political knowledge.⁵³ In each of the two Eurobarometer surveys, respondents note the age at which they left school, which corresponds to the educational attainment of most individuals, regardless of the differing degree programs and systems offered in across different European countries. The result is a nine-point ascending scale of education with people who had left school prior to age 14 scoring a 1 and those who finished their schooling at age 22 or above scoring an 8. I code individuals between the ages of 15 and 22 reporting that they are still a student as having left school at that age, to reflect their rough current state of education. This education measure should correlate positively with political knowledge.

Economic status correlates with political knowledge (Nadeau and Niemi 1995). Measuring socioeconomic status among the residents of European countries contains potential pitfalls due to differing purchasing powers within various countries. The 1999 and 2006 studies use two separate ways to get at the concept. In 1999, the Eurobarometer asked respondents to identify their monthly household incomes on a 12-point scale adjusted to the local currency and economic standards, with higher points on the scale associated with higher income brackets. The 2006 survey takes a different approach and asks individuals if they own a list of eight common consumer items like televisions, DVD players, cars and Internet service. I construct a six-point additive SES status index from these measures with higher score indicating greater levels of goods ownership.⁵⁴ I dropped two questions that asked if respondents owned a television or a home that had been paid off. Since more than 98 percent of respondents answered that they

⁵³ (Luskin, *Measuring Political Sophistication* 1987)

⁵⁴ Cronbach's alpha for the 6-item index is 0.806.

owned a TV, the item adds little useful variation to the overall measure.⁵⁵ The paid-off home ownership item is merely a subset of another item that asks if respondents owned their own home that they had paid off or on which they had a mortgage. Both the 2006 goods measure of wealth and the 1999 income measure should positively correlate with political knowledge. I call the 1999 variable “income” and the 2006 variable “wealth,” in tables because of their distinctive measures. In general discussion however, I will use the terms “income,” “wealth,” “income/wealth” or “socioeconomic status” interchangeably to analyze the effects of these variables.

Finally, I control for country-level sources of variation in my data. First, the European Union has a two-tier organization. Most EU countries take part in the common currency of the Euro, while others have chosen to retain control over their monetary policy. Countries in the Eurozone may have citizens who pay closer attention to the affairs of the EU, due to the stronger role the EU plays in setting economic policy in Euro-area. Therefore, I created a measure scoring countries who were members of the monetary union as “1” and those who were not as “0.” In 1999, four countries of the 14 in this study – Greece, the United Kingdom, Sweden and Denmark had not joined the Eurozone. By 2006, Greece had joined. All else being equal, there should be a positive relationship between a country’s membership in the EU monetary union and a citizen’s knowledge of EU affairs.

Because they all deal with identifying political leaders, the knowledge questions for the 1999 study also introduce another source of possible variation. The longer an individual has held

⁵⁵ This observation is doubly true as the individuals who don’t own a television presumably are much more likely not to watch any television, meaning that they won’t show up in this analysis, which after all, focuses on individuals who watch at least some television.

an office, the more likely the population would be able to identify her. To control for this potential variation, I deploy several measures of a person's tenure in office. For the questions asking respondents to identify their country's foreign minister and finance minister, I simply create a country-level variable measuring the number of years that the minister in question had been in office at the time, which range from one to seven years. These two measures should vary positively with political knowledge.

I use a slightly different approach to control for the time an EU commissioner has served. Due to their fixed terms in office, it seemed most appropriate to assign the residents of each country a score based on the number of terms that their commissioner had served. Because respondents only had to identify one commissioner, countries with two commissioners in 1999 (the United Kingdom, Germany, France, Italy and Spain) received a score representing the longest-serving commissioner. Scores ranged from 1 to 4 across this variable, and should vary positively with citizen levels of political knowledge. A summary of the distributional statistics for relevant variables appears in Table 3.

Year	Variable	Range	Mean	median	Std. deviation	N
1999	Political Knowledge	0-4	2.02	2	1.46	14,093
	Education	1-9	4.68	5	2.88	14,129
	Income	1-12	6.60	6	3.39	9,689
	Political Interest	0-2	0.77	1	0.62	14,053
	Commissioner Term	1-4	1.86	2	0.99	14,133
	Foreign Minister experience	1-7	3.35	3	1.68	14,133
	Finance minister experience	1-7	3.49	3	1.72	14,133
2006	Knowledge	0-3	1.43	1	0.95	14,124
	Education	0-9	4.95	5	0.98	13,392
	Goods	0-6	3.62	4	1.91	14,124
	Political Interest	0-2	0.86	1	0.65	14,084

Conditional Effects

My analysis keys on several relationships. First, subsidies should positively correlate with knowledge. Second, the subsidy hypothesis additionally predicts that subsidizing public broadcasters strengthens the relationship between watching public broadcasting and political knowledge. To measure this relationship, I use an interactive term that multiplies the subsidy and “Public Viewership” variables together. I predict that this term will have a positive sign, which would indicate that subsidies for public broadcasters increase public affairs knowledge among those who watch public television.

Finally, the neutralization hypothesis predicts that subsidizing public broadcasters will decrease the effects of individual-level variables on political knowledge. These variables include political interest, as previously tested (Iyengar, et al. 2010), but also a broader array of socioeconomic variables, namely education, income and gender. I include an interactive term for the product of subsidy and each of these variables in each regression equation. The sign on each of these four interactive terms should be negative, which would mean that that subsidizing public broadcasters would decrease the political knowledge gap between rich and poor, educated and uneducated, interested and uninterested, and men and women.

To test my hypotheses, I regress the political knowledge index on the independent variables. I estimate three regressions for both the 1999 and 2006 data. The first column for each year in the table (1999a and 2006a) represents the simplest test of the subsidy hypothesis without any interactive terms. The second column (1999b and 2006b) shows the results of the interactive test between subsidies and public broadcaster viewership. The final column (1999c and 2006c) represents the results of the tests for the neutralization hypothesis, showing interactions between subsidies on one hand and income, education, gender and political interest on the other. Because the dependent variable of knowledge has a limited number of ordered categories, I employ

ordinal probit analysis. Because each individual in my analysis is nested within a country, I use cluster-adjusted standard errors to account for within-country error correlations.

Results

Model		1999a	1999b	1999c	2006a	2006b	2006c	
Broadcasting Variables	Viewership	0.342** (0.098)	0.109 (0.103)	0.360** (0.091)	0.062 (0.075)	-0.047 (0.058)	0.064 (073)	
	Subsidies	0.156 (0.256)	-0.041 (0.325)	0.617** (0.189)	-0.057 (0.152)	-0.144 (0.211)	0.202 (0.243)	
	Viewership X Subsidies		0.284* (0.144)			0.139 (0.111)		
SES and political interest	Income/Wealth	0.034** (0.011)	0.034** (0.012)	0.097** (0.026)	0.041** (0.011)	0.041** (0.012)	0.066** (0.014)	
	Education	0.068** (0.011)	0.068** (0.012)	0.079** (0.010)	0.068** (0.008)	0.068** (0.008)	0.078** (0.017)	
	Gender	0.330** (0.022)	0.331** (0.022)	0.319** (0.040)	0.331** (0.043)	0.331** (0.043)	0.426** (0.069)	
	Political Interest	0.473** (0.034)	0.471** (0.033)	0.477** (0.064)	0.224** (0.023)	0.223** (0.022)	0.311** (0.022)	
	Income/Wealth X Subsidies			- 0.072** (0.028)			-0.032^ (0.018)	
	Education X Subsidies			-0.015 (0.017)			-0.012 (0.020)	
	Gender X Subsidies			0.012 (0.047)			-0.109 (0.086)	
	Political Interest X Subsidies			-0.009 (0.073)			- 0.103** (0.034)	
	Control variables	Eurozone membership	0.010 (0.200)	0.005 (0.200)	0.022 (0.193)	0.156 (0.121)	0.159 (0.121)	0.149 (0.124)
		Commissioner Experience	-0.131 (0.132)	-0.135 (0.131)	-0.158 (0.133)			
Foreign Min. Experience		0.045 (0.045)	0.041 (0.046)	0.041 (0.043)				
Finance Min. Experience		0.031 (0.03)	0.031 (0.029)	0.032 (0.031)				
Regression statistics		Cutpoint 1	0.530 (0.4234)	0.346 (0.468)	0.878 (0.316)	0.179 (0.207)	-0.044 (0.216)	0.213 (0.238)
		Cutpoint 2	1.008 (0.441)	0.824 (0.483)	1.359 (0.334)	1.045 (0.200)	0.984 (0.207)	1.242 (0.237)
		Cutpoint 3	1.693 (0.430)	1.509 (0.474)	2.047 (0.324)	2.128 (0.194)	2.067 (0.204)	2.325 (0.232)
	Cutpoint 4	2.374 (0.433)	2.191 (0.479)	2.729 (0.332)				

Pseudo R2	0.0852	0.0857	0.0872	0.0422	0.0424	0.0430
Total N	9,040	9,040	9,040	13,361	13,361	13,361
Significance levels: ^=.1 *=0.05, **=0.01						

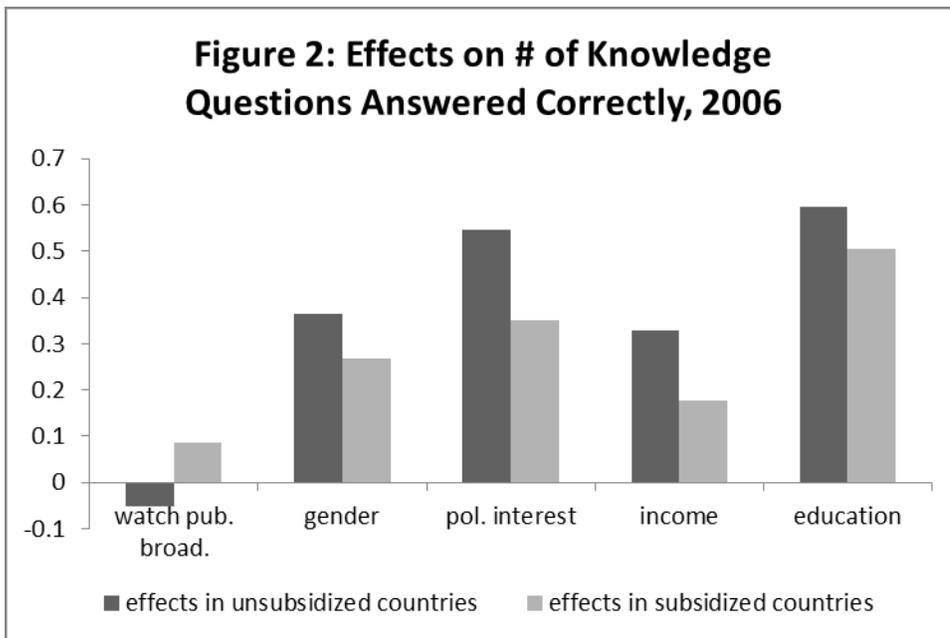
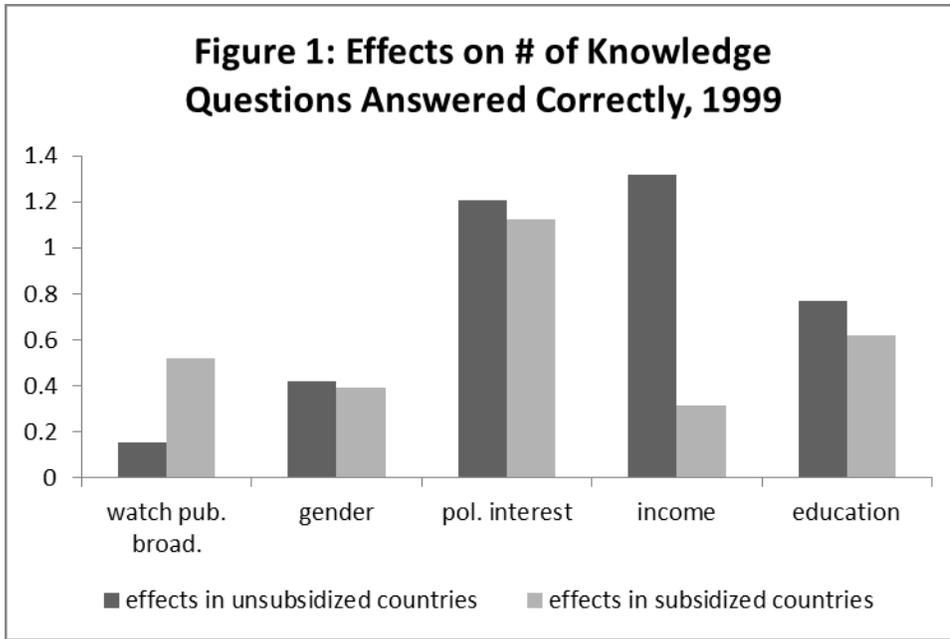
Table 4 shows the results of the analysis, while figures 1 and 2 graphically show the estimated effects of each independent variable on political knowledge in countries with unsubsidized and subsidized public broadcasting systems. Overall, Table 4 shows broad support both the subsidy and the neutralization hypothesis, in the 1999 table. Column A shows mixed support for the subsidy hypothesis. The public funding variable is essentially zero in the 2006 study. The magnitude has a positive coefficient of reasonably large magnitude for the 1999 study, though it is not significant at standard levels. One reason for this lack of significances is that subsidy is a country-level variable that has very few degrees of freedom when combined in a regression with four other country-level variables in a study with only 14 countries. Although using 14 countries is an improvement over previous comparisons of public broadcasting and political knowledge, which generally only use two to four countries, leverage remains limited. The individual-level variables of political interest, education, income and gender all have coefficients that are statistically significant at the 0.05 levels, which match existing research showing that more interested, better-educated, wealthier and male respondents possess higher levels of political knowledge, all else being equal.

The “b” columns in Table 4 show strong support for the subsidy hypothesis. The interaction of public broadcasting subsidies and public viewership produces a positive coefficient in 1999. The interaction term is statistically distinct from zero at the 0.05 level in 1999. For the 2006 study, as I predict, the interactive term between subsidy and viewership does not reach significance – remember that the 2006 data should show weak effects because the specification of the 2006 measures of public broadcasting measures reported viewership of all programming,

not merely public affairs programming.⁵⁶ This difference in the magnitude and significance levels of the interactive terms provides evidence for the proposition that attention public affairs programming in subsidized public broadcasting systems— not merely watching a public broadcaster – drives knowledge.

Finally, the “c” columns of Table 4 show the interactive terms between individual education, gender, income and political interest, and the subsidy variable. Across the two years, seven of the eight interaction terms have negative signs, which support the neutralization hypothesis. The one positive interaction – between gender and subsidies in the 1999 test, contains magnitudes that are so small that they are inconsequential. The interaction term between subsidies and income/wealth is statistically significant in both the 1999 regression (at the 0.05 level) and in the 2006 results (at the 0.10 level). The negatively signed interaction term between political interest and subsidies is significant in the 2006 data, but not in the 1999 data. Despite mixed results regarding statistical significance, however, the overall pattern of negative effects across all eight measures supports the neutralization hypothesis.

⁵⁶ Also notice how the 2006 regression predicts roughly half the variation of the data in comparison to the 1999 regress. (Pseudo R2 of 0.043 to 0.088 respectively).



Both coefficient directions and statistical tests generally support my hypotheses, but reading the coefficients alone does not indicate whether or not the effect sizes are substantively large. Additionally the conditional nature of interaction terms and probit regression mean that effect sizes are not static at different values of each variable. I illuminate this issue by displaying

effects sizes in figures 1 and 2. To calculate these effects, I followed a two-step process. Using statistical analysis software, I first calculated the estimated probability that a person will answer a given number of political questions correctly at each level of a given independent variable, the subsidy variable and the affected interaction terms while holding all other variables at their medians. For example, I calculate the estimated probabilities of a male respondent answering 0, 1, 2, 3, or 4 of the questions correctly of the knowledge index (for 1999's knowledge index) that makes up my dependent variable for all possible value combinations the public television consumption and subsidy. In this case, I would have the estimated probabilities of the same hypothetical person if he watched public television in a country with subsidies, if he watched public television in a country without subsidies, if he only watched commercial television in a system with public subsidies or if he only watched commercial television without subsidies for public-service broadcasters. I repeated these calculations for all the other relevant interactions regarding gender, income, education and political interest.

These estimates are more intuitive than regression coefficients. To further collapse the output into a simple figure, I took an additional step and used the estimated probabilities to determine the expected average number of questions answered correctly on the knowledge index. For instance, if a hypothetical respondent of interest had respective probabilities of correctly answering zero, one, two, three or four questions on the knowledge index of 0.2, 0.2, 0.2, 0.2 or 0.2, then simple multiplication yields an expected number of right answers of 2.⁵⁷

⁵⁷ Mathematically:

$$\begin{aligned}
 &.2(0)+.2(1)+.2(2)+.2(3)+ 0.2(4) \\
 &= 0+.2+.4+.6+.8 \\
 &= 2
 \end{aligned}$$

These calculations yield the bar graph in Figure 1. Each paired set of bars represents the effect size of a given independent variable at median levels of all other variables. The darker bar on the left of each pair represents the effect of the variable in countries that do not subsidize their public broadcaster, while lighter bars on the right represent the variable's effect in countries with subsidized public broadcasting. In the 1999 data the effect of watching public broadcasting on knowledge more than triples when moving from an unsubsidized to a subsidized system, increasing from 0.140 to 0.497. The effect size of 0.497 is roughly 12 percent of the total range on the dependent variable, meaning that respondents increased the number of correct answers by one half a question (on a 0-4 scale) in subsidized systems – a large effect that strongly supports the subsidy hypothesis.⁵⁸ For 2006, the effect size is much smaller, with respondents who watch public television in countries with subsidies only recording an additional 0.119 correct answers compared to their counterparts in unsubsidized countries. This difference represents slightly more than a 4 percent improvement on 2006's three-question knowledge index. This muted improvement supports my theory's implication that superior news and public affairs programs on subsidized public broadcasters drive knowledge gains, not merely watching public broadcasting.

In contrast, the effect sizes decrease for the other predictors of knowledge between unsubsidized and subsidized political broadcasting systems in both 1999 and 2006. In 1999, some changes are quite small, with the effects of gender and interest hardly changing at all. However, moving to a subsidized political broadcasting system depresses the effect of education on political knowledge by a more noticeable 19.9 percent. Finally, the effect of income drastically falls by 73.0 percent. In 2006, the decreases on the magnitude are 15.7 percent for

⁵⁸ Although the comparison isn't strictly relevant, an analogy would be having the average score on a test increasing from 75 percent to 87 percent --- or a C to a B+ at most US institutions.

education, 24.7 percent for gender, 36.3 percent for political interest and 48.2 percent for income, adding additional support for the neutralization hypothesis.

Another way to contrast the impact of subsidies is to compare the relative sizes of the effects of public broadcasting viewership with the other independent variables across systems. For the 1999 analysis, in countries with unsubsidized broadcasting systems watching public broadcasting has by far the smallest effect on knowledge of the five variables, increasing the average number of correct answers on the knowledge scale by a mere 0.139 questions, while the next smallest coefficient, gender, leads to a 0.389-question increase in the predicted number of correct answers. In subsidized systems, however, watching public broadcasting is the variable with the third-largest effect, recording a larger effect size (0.497) than income (0.351) or gender (0.372), while nearly matching the size of education (0.626).⁵⁹

To summarize, the results shown in figures 1 and 2 strongly support the subsidy hypothesis, which states that subsidizing public broadcasters has a positive effect on political knowledge among people who watch public broadcasting. The data also shows that subsidizing public broadcasting dampens the effects of class and interest, which supports the neutralization hypothesis. These results are statistically significant or at least suggestive, and substantively meaningful.

An Iberian effect?

One objection to these conclusions is that Spain and Portugal share a long cultural history and these results represent some unspecified “Iberian” effect. To address this concern, I re-analyze a smaller sample of countries for which I have more detailed financial data from 1999,

⁵⁹ When I compare “effect sizes” I am not referring to the effect size per unit, but rather the total effect generated by moving across the entire range of the variable from lowest to highest value.

subdividing them into three levels of subsidy. Spain and Portugal provide no direct subsidies, and are classified as the “low” group. Among countries that subsidize their public broadcasters, Italy and Ireland rely relatively extensively on advertising funding, and provide between 40 and 50 percent of the budgets of their public broadcasters through subsidies. I classify these two as the “moderate” subsidy group. Finally, Britain, Sweden and Denmark provide nearly the entire budget of their broadcasters through subsidies. None of the three sell any advertising on their public networks, with the exception of Sweden’s STV allowing limited sponsorship of sporting events. I classify these three countries as the “high” subsidy group.

Table 5: Effects of Public Broadcasting Subsidies on Political Knowledge (Robustness Check)

Variable	Low-subsidy group (Portugal and Spain)	Medium Subsidy Group (Italy and Ireland)	High Subsidy Group (Britain, Sweden, Denmark)
Watching public broadcasting	0.099 (0.068)	0.369** (0.124)	0.788** (0.067)
Education	0.085** (0.013)	0.077** (0.014)	0.100** (0.008)
Income	0.057** (0.010)	0.030* (0.013)	0.011 (0.007)
Gender	0.342** (0.066)	0.446** (0.073)	0.334** (0.048)
Political Discussion	0.527** (0.056)	0.460** (0.059)	0.390** (0.040)
Cutpoint 1	0.652 (0.085)	0.578 (0.155)	0.804 (0.086)
Cutpoint 2	1.052 (0.087)	1.179 (0.157)	1.195 (0.0869)
Cutpoint 3	1.726 (0.094)	10.726 (0.160)	1.775 (0.090)
Cutpoint 4	2.507 (0.104)	2.300 (0.164)	2.452 (0.094)
Pseudo R2	0.0895	0.0687	0.0862
N	1,143	919	2,160
Significance levels: ^=.1 *=0.05, **=0.01			

I estimated separate regressions using probit analysis for each of the three groups from the 1999 Eurobarometer data, maintaining the individual-level controls from the first set of regression equations. Table 5 shows the coefficients for each group, while Figure 3 shows the effect sizes of each of the variables compared across all three regressions. For the “Iberian effect” hypothesis to hold, the moderate subsidy group and the high subsidy group should show similar effect sizes for the effect of watching public broadcasting on knowledge. That result would suggest something unusual about Spain and Portugal drives the effect, not subsidies.

This is clearly not the case. The low subsidy group’s coefficient on the public broadcasting variable is 0.099 (and statistically insignificant at the 0.05 level), while the middle group’s effect is 0.369 and the high subsidy group’s is 0.788. This nearly linear increase is exactly what the subsidy hypothesis predicts and suggests that something more is going on than any innate differences that Spain and Portugal have from the rest of Europe. The picture is similar for the neutralization hypothesis: Both the political discussion and income variables show the largest effects in the low-subsidy countries and the smallest effect sizes in the high-subsidy countries, with the effect sizes for the middle-subsidy countries being in between. The picture is less clear for the education and gender variables, but certainly do not show a pattern supporting the idea that the Iberian countries are different than the rest of Europe.

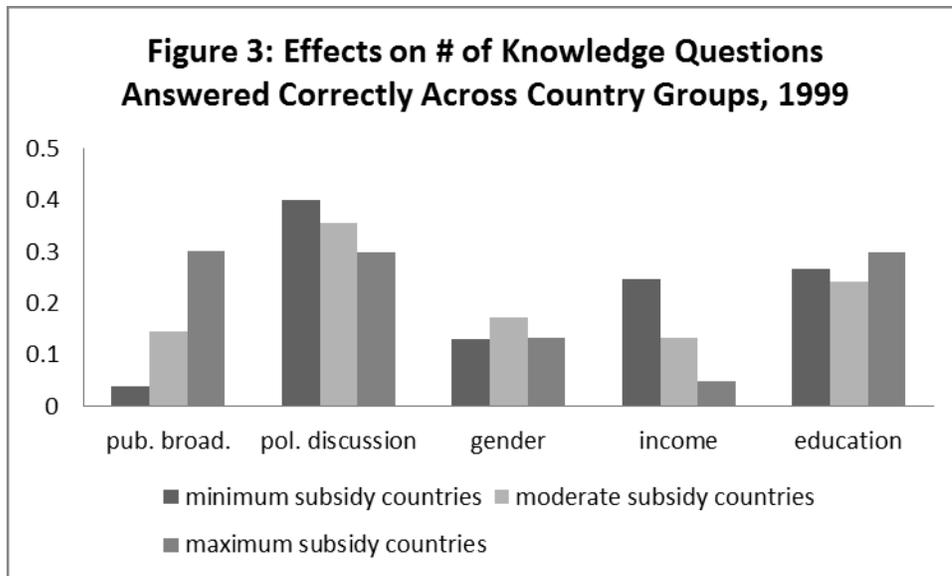


Figure 3 shows the estimated effects of each variable on political knowledge under the revised tripartite schema. To make similar comparisons across each set of countries, I estimated the marginal effect of each variable while holding all other variables constant. To ensure comparability across all groups, I used variable values that corresponded with the median of the median of the three groups. For example, the respective median education levels in the low, medium- and high-subsidy groups were “1”, “4” and “6”. I calculated the effects sizes shown in Figure 3 with the value of each group’s education level set at “4.”

The magnitudes of estimated effects on each variable strongly support the subsidy hypothesis and offer mixed support for the neutralization hypothesis. Watching public broadcasting in a low-subsidy country has small effects; a respondent who reported getting news from a public broadcaster answered an estimated 0.04 more political knowledge questions correctly. This effect size jumps to 0.14 questions for the medium-subsidy group and 0.30 for the high-subsidy group. In contrast, the estimates show decreasing effects for income and political discussion respectively. Effect sizes for income drop from 0.25 in the high-subsidy group to 0.14 in the medium-subsidy group and 0.05 in the high-subsidy group – almost the precise mirror

image of the effect sizes shown for the public broadcasting variable. For political discussion, an increase from the lowest levels to interest to the highest leads to a 0.4-question boost in the number of right answers to the political knowledge questions for respondents in the low-subsidy group, which drops to an estimated increase of 0.35 for the medium-subsidy group and 0.30 for the high subsidy group. The pictures for education and gender are more muddled, but the mixed results matches the general pattern from the dichotomous definition of public broadcasting.

Finally, the magnitudes of the effects seem to match the earlier analysis. The effect of public broadcasting moves from the smallest of all the variables in the low-subsidy group, to a modest effect that roughly matches income in the medium group, to an effect that outstrips gender and income and is roughly on par with political interest and education among the high-subsidy countries. All of this analysis adds up to more robust support for the subsidy and neutralization hypotheses, while eliminating the hypothesis that something different about Spain and Portugal is causing the observed data patterns.

Conclusions

Using the attributes of the residents of 14 European countries, I test the ideas that government aid to public broadcasters increases public knowledge; and that the information-rich environment generated by subsidized public broadcasting reduces the differences in knowledge produced by gender, education, income and political interest. The subsidized knowledge hypothesis holds; individuals who watch public television in countries that subsidize their public broadcasters has significantly higher levels of political knowledge than both citizens who watch commercial television and those who watch unsubsidized public broadcasters.

The neutralization hypothesis also survives. Subsidizing public broadcasters reduces – to varying extents – the effects that social, economic and demographic variables have on political

knowledge. Since I argue that knowledge is one key to the ability of voters to hold their leaders democratically accountable, having the government subsidize public broadcasters helps level the political playing field between historically disadvantaged groups (the poor, the uneducated and women) and traditionally dominant groups (the wealthy, highly educated and men).

These results warrant caution. The effects of subsidies on reducing gender disparities and political interest are quite small. Only for income does it appear that subsidizing public broadcasting has a substantial and statistically distinct leveling effect. On the whole, however, it is quite suggestive that interactions between class, gender and interaction and subsidizing public broadcasting are negative.

Finally, these results leave out one important piece of the puzzle: viewership. Unwatched public broadcasters, regardless of subsidy, impart no political knowledge, as the depressed state of American political knowledge and the extremely low viewership of PBS in comparison to its foreign counterparts attests. In addition to providing for more sophisticated future tests of the subsidy and neutralization hypotheses I develop here, future research needs to understand how public broadcasters can maintain viewership in a 500-channel universe while still providing information. Only by understanding the dynamics of audience movement can policymakers take advantage of the boost to political knowledge provided to viewers of well-funded public broadcasting outlets. However, the results provide substantial evidence that public broadcasters both increase the overall level of knowledge in democracies and close the gap in knowledge between privileged and underprivileged citizens. This evidence points tantalizingly in the direction of how to achieve the dream of a fully informed public equipped to vote its interest.

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