

Campaigns Matter: How Voters Become Knowledgeable and Efficacious During Election Campaigns

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Election campaigns are more than simple competitions for votes; they also represent an opportunity for voters to become politically knowledgeable and engaged. Using a large-scale Web panel ($N \approx 5,000$), we track the development of political knowledge, internal efficacy, and external efficacy among voters during the 2011 Danish parliamentary election campaign. Over the course of the campaign, the electorate's political knowledge increases, and these gains are found across genders, generations, and educational groups, narrowing the knowledge gap within the electorate. Furthermore, internal and external efficacy increase over the course of the campaign, with gains found across different demographic groups, particularly narrowing the gaps in internal efficacy. The news media play a crucial role, as increased knowledge and efficacy are partly driven by media use, although tabloids actually decrease external efficacy. The findings suggest that positive campaign effects are universal across various media and party systems.

Keywords election campaign, knowledge gap, efficacy, public service, Denmark

Election campaigns are the highlights of democracy. It is the time when candidates struggle for attention, cuing up in front of reporters and TV cameras, and voters are exposed to a more intense flow of political information than at any other time in the election cycle. The literature on campaign effects has traditionally judged the importance of election campaigns in terms of their impacts on election outcomes (e.g., Erikson & Wlezien, 2012; Holbrook, 1996), but from a democratic perspective, equally, if not more, important questions are how campaigns affect voters' level of political knowledge, which is necessary to navigate the political space (Craig, Kane, & Gainous, 2005; Freedman, Franz, & Goldstein, 2004; Stevenson & Vavreck, 2000), and how they affect voters' perceptions of the political system and their own political competence.

The contribution of this study is threefold. First, we add to the burgeoning literature on civic campaign effects by not only investigating a campaign's effects on citizens' factual knowledge about politics but also the impact on citizens' perceptions of their own ability to understand and participate in politics (internal efficacy) and their perceptions of the responsiveness of the political system (external efficacy). By studying these three measures, we combine key civic elements and present a more comprehensive measure of how election campaigns matter from a civic perspective. We analyze the development of these three

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factors by drawing on data from a large panel of voters surveyed several times over the course of the 3-week-long 2011 parliamentary election campaign in Denmark. Second, this study thereby also contributes by investigating the civic effects of election campaigns in the context of a multiparty system and a media environment with strong public service outlets. On the one hand, the multiparty context provides a critical test as to whether campaigns actually help voters make qualified judgments or the many political parties and conflicting messages drive voters into confusion and despair. On the other hand, the presence of public service TV channels may show us whether the requirements of balanced and impartial campaign coverage, to which all political parties have access, foster additional learning. Third, and finally, we contribute methodologically by showing how conflicting results on comparative knowledge gains between different groups of voters may be driven by different analytic approaches, and we show that comparing knowledge gains between groups defined by their initial levels on the dependent variable is highly questionable.

What is the relevance of a civic perspective on election campaigns? First, normative ideas about democracy presuppose that citizens are able to form opinions of a reasonable quality, which requires—among other things—a sufficient level of knowledge about politics and political issues (Berelson, 1952; Price & Neijens, 1997). In addition, the concept of democracy also presupposes some degree of normative support from the citizens. For democratic participation to be meaningful, citizens must subjectively have some confidence in their own abilities to understand political questions and to act on their political opinions, and they also must believe that the political system is responsive to citizen demands. Conversely, if citizens regard themselves as politically inept and the political system as unresponsive, democratic elections seem pointless and lose their democratic legitimacy. In other words, election campaigns may serve an important function, not only because they are used to determine who should govern but also because they “can determine if citizens are pulled into learning about, thinking about, and seeking information about the candidate or if citizens remain on the sidelines as disinterested or even disillusioned observers” (Kam, 2007, p. 17).

Second, a civic perspective on election campaigns is relevant because most current election campaigns are partly sponsored by public funds. This funding can both be direct funding for individuals candidates’ campaigns, such as the funding from the Federal Election Campaign traditionally accepted by the candidates in U.S. presidential elections (Blumenthal, 1982), and indirect funding, such as the general financial support for political parties used in Denmark and most other European countries (Biezen, 2010; Needham, 2005). This widespread public funding seems difficult to reconcile with the view of election campaigns as merely a means of determining who wins. Viewed from this “who wins” perspective, election campaigns are essentially zero sum games, as every gain by a political competitor is offset by another competitor’s loss. Therefore, from this perspective, there is little reason for public subsidies for election campaigns. In other words, public funding of election campaigns only makes sense if the campaigns are about something more than simply picking a winner. Therefore, public funds for election campaigns can be assessed in terms of whether elections increase the knowledge and political efficacy of citizens.

Overall Effects on Knowledge and Civic Attitudes

Political Knowledge

Using gains in knowledge among the electorate as a measure of a campaign’s success could very well seem like a surefire way to disappointment. The average voter is typically viewed as relatively politically ignorant (Converse, 1964; Delli Carpini & Keeter, 1996;

Downs, 1957; Hansen, 2009; Lippmann, 2004; Zaller, 1992) and, more importantly for this study, modern election campaigns are frequently bemoaned as shallow events in which voters learn little of value, in part because the media overwhelmingly focus on political strategy instead of substance (Blumler & Coleman, 2010; Cappella & Jamieson, 1997; Patterson, 1993). However, the empirical studies that actually measure knowledge effects during election campaigns show that there are knowledge gains during campaigns (e.g., Craig et al., 2005; Hansen, 2008), knowledge is positively associated with exposure to campaigns (Freedman et al., 2004), and longer campaigns generally lead to greater knowledge gains (Arceneaux, 2006; Stevenson & Vavreck, 2000). Based on these results, we test the following hypothesis.

H1: Political knowledge increases during the election campaign.

By testing this hypothesis, our first aim is to investigate the generalizability of previous findings by investigating hypotheses in the context of a multiparty system and a public service media system. Second, we revisit the question of knowledge gains to show how disparities between previous studies may be the result of different analytical approaches. Before turning to this methodological query, however, we wish to introduce two new dependent variables to the study of campaign effects, namely internal efficacy and external efficacy.

Internal and External Efficacy

We should first note that the concept of efficacy is not always clearly defined or delineated from comparable concepts in the literature. Studies are not always clear about whether they are investigating internal efficacy or external efficacy, and the relationships between efficacy and concepts such as trust and cynicism are also unclear. Political efficacy was originally defined as follows: “the feeling that individual political action does have, or can have, an impact upon the political process, i.e., that it is worthwhile to perform one’s civic duties. It is the feeling that political and social change is possible, and that the individual citizens can play a part in bringing about this change” (Campbell, Gurin, & Miller, 1954, p. 187)

Dividing the concept into two components was first suggested by Lane (1959, p. 149) and later by Balch (1974, p. 24), who labeled the two components internal efficacy and external efficacy. Internal efficacy is defined as “individuals’ self-perceptions that they are capable of understanding politics and competent enough to participate in political acts such as voting,” (p. 253) whereas external efficacy is defined as “the feeling that an individual and the public can have an impact on the political process because government institutions will respond to their needs” (Miller, Miller, & Schneider, 1980, p. 253; see also Craig & Maggionto, 1982; Niemi, Craig, & Mattel, 1991).¹ Much has been written on the relationship between political efficacy and political participation (e.g., Finkel, 1985; Valentino, Gregorowicz, & Groenendyk, 2009), but the overall impacts of election campaigns on political efficacy have received comparably little attention.

It is clear, however, that internal efficacy is positively correlated with political knowledge (Bennett, 1997; Jung, Kim, & De Zúñiga, 2011), and if an election campaign increases political knowledge, we should therefore expect, everything else being equal, that subjective measures of political efficacy will also increase over the course of the campaign. This expectation is also in line with the results of Banducci and Karp (2003), who found that “system support,” which is comparable to our understanding of external efficacy, has increased during election campaigns in the United Kingdom, the United States, and New Zealand. Therefore, we propose the following hypotheses.

H2: Internal efficacy increases during the election campaign.

H3: External efficacy increases during the election campaign.

Having hypothesized overall increases in knowledge, internal efficacy, and external efficacy, we now turn to the question of gains among more specific groups of voters.

Closing or Creating Gaps in the Electorate?

The overall effects of the election campaign may reveal very different patterns in knowledge gains and effects on efficacy. Tichenor, Donohue, and Olien (1970, pp. 159–160) posited a general “knowledge gap” hypothesis: “As the infusion of mass media information into a social system increases, segments of the population with higher socioeconomic status tend to acquire this information at a faster rate than the lower status segments, so that the gap in knowledge between these segments tends to increase rather than decrease.”

When considered in a campaign context, this hypothesis may lead to the prediction that gains in knowledge are found primarily among highly educated voters, who typically already have high levels of knowledge. In other words, the hypothesis may postulate a Matthew effect, in which the information-rich become richer (Luskin, Fishkin, & Jowell, 2002; Price & Zaller, 1993). This effect could be exacerbated by the multiparty context that we investigate (Bengtsson et al., 2013; Hopmann Vliegenhart, De Vreese, & Albæk, 2010). The presence of many parties in such a system tends to provide a crowded party space with multiple political dimensions at play. This means that the voters are caught in a political web of multiple policy dimensions and numerous, conflicting messages during the campaign.

Following Tichenor et al. (1970), a number of studies have shown that knowledge gaps may increase during election campaigns (Craig et al., 2005; Holbrook, 1999; Moore, 1987; Nadeau, Nevitte, Gidengil, & Blais, 2008), whereas other studies have only partially confirmed the knowledge gap hypothesis or found no differences in knowledge acquisition across different groups (Holbrook, 2002). Finally, several studies have actually found the opposite, with election campaigns decreasing knowledge gaps (Freedman et al., 2004; Norris & Sanders, 2003; Ondercin, Garand, & Crapanzano, 2011).² These somewhat conflicting results may be genuine and reflect different effects in different election campaigns and different political contexts (e.g., party and media systems). However, a closer examination of the literature reveals that the differences in results may be driven, to a large degree, by different analytical approaches, namely choices regarding (a) the compared groups, (b) the comparison of absolute or relative gains, and (c) the use of bivariate or multivariate analyses to conduct the comparison.

Comparing Different Groups

While some studies compare differences across groups in terms of education (e.g., Holbrook, 2002), others compare differences in other variables, such as gender (Ondercin et al., 2011) or political sophistication (Arceneaux, 2006). This variation could explain some of the different results. Norris and Sanders (2003) simply compare two groups with low and high scores on pre-treatment knowledge. However, a comparison of two groups that are defined by previous scores on the dependent variable will bias the results toward convergence (i.e., closing of the gap) as long as there is any random error (e.g., random measurement error or random fluctuations). In other words, the decreased knowledge gap

found by Norris and Sanders (2003) may not be an effect of the election campaign but rather a statistical artifact, namely *regression toward the mean* (Bland & Altman, 1994; Galton, 1886; Quah, 1993; Rocconi & Ethington, 2009), often amplified by floor effects for voters with low initial levels of knowledge and ceiling effects for voters with high initial levels of knowledge (Luskin et al., 2002).

Comparing Absolute Versus Relative Gains

Most studies use changes in absolute scores on various knowledge scales to compare knowledge gains between different groups. In contrast, Freedman et al. (2004) argue that the greatest knowledge gains are found among those with low levels of initial political information because their knowledge gains are greater in percentage terms, that is, when measured as a relative increase. However, when measured in absolute terms, the results from Freedman et al. (2004) show equal or greater knowledge gains among already knowledgeable individuals.

Comparing Groups of People (Bivariate) or Regression Coefficients (Multivariate)

Finally, existing studies differ in their statistical modeling and their control variables. For example, the development of knowledge gaps among different educational groups can be analyzed by conducting a bivariate comparison of the knowledge gains across groups of people as defined by their educational level. Alternatively, educational effects may be analyzed by including education as one of many variables in a multivariate regression analysis, thereby estimating the impact of education while controlling for everything else.

The growing literature on election campaigns and knowledge gaps has not been mirrored by the literature on gaps in internal and external efficacy during election campaigns. Banducci and Karp (2003) investigated whether variables such as education and gender have an effect on gains in “system support,” but their study did not investigate whether gaps among different demographic groups changed during election campaigns. To our knowledge, this study is the first to investigate whether gaps in internal and external efficacy increase or decrease during an election campaign. In short, we aim to answer the following research question: Do gaps in knowledge, internal efficacy, and external efficacy increase or decrease during an election campaign? We investigate this by comparing groups categorized by (a) education, (b) gender, (c) age, and (d) initial levels of knowledge and efficacy. Furthermore, we investigate the changes in these gaps both in absolute and in relative terms, and we compare results from bivariate and multivariate analyses. Why focus specifically on education, gender, and age? As we show in the following section, these variables may work as central moderators of campaign effects.

Explaining Development by Demographics

There are strong reasons to expect education to be positively correlated with learning during an election campaign when other characteristics are held constant, as education may help citizens develop skills that facilitate the comprehension and retention of political information (Delli Carpini & Keeter, 1996, pp. 192–193). Note that this cannot be assessed by simply considering the gaps between groups of voters with different educational attainment, as education levels are correlated with a host of other characteristics. Disentangling the specific effects of education requires a multivariate analysis that controls for these characteristics. Gender may, at first blush, also appear to have an important impact, as women

seem to learn more during election campaigns (Ondercin et al., 2011). However, this finding is likely not a gender effect per se but rather a result of the different initial levels of knowledge and efficacy among men and women. Therefore, we expect that the impact of this variable is negligible once we control for other factors, particularly initial levels of knowledge. Finally, we include age as a variable in the analysis. We expect age to have a significant, negative impact on learning, and thereby perhaps also on efficacy, for two reasons. First, absorbing political knowledge requires cognitive skills, and aging tends to have a negative impact on a number of these skills, such as memory and “speed of processing” (Lau & Redlawsk, 2006, 2008). Second, younger voters generally have less stable attitudes than older voters (Jennings & Niemi, 1978; Stubager, Hansen, & Goul Andersen, 2013). Thus, younger voters might be more motivated to acquire new knowledge on which to base their opinions. Thus, we propose the following hypotheses.

H4: Increases in knowledge and efficacy are positively correlated with education.

H5: Increases in knowledge and efficacy are not related to gender.

H6: Increases in knowledge and efficacy are negatively correlated with age.

Explaining Development by Media Use

While we expect demographic variables to have an impact, such factors are, by necessity, only part of the story. If the campaign is to have some effect, it is not sufficient that voters are motivated and able to absorb political information. They must also be exposed, or choose to expose themselves, to sources of political information. Therefore, in our quest to gain a better understanding of the development of knowledge and efficacy during a campaign, we turn to the mass media. Despite assertions concerning the rising importance of new, Internet-based communication channels between politicians and voters and questions regarding the future of the traditional mass media (Couldry, 2009), the traditional mass media remain the most important sources of information and vehicles for communication between politicians and citizens (Strömbäck, 2008, Karlsen, 2009).

Consequently, at first glance, we would expect that mass media use during the election campaign would drive gains in knowledge and associated gains in efficacy. From a broader perspective, this aligns with the idea of a “virtuous circle” (Norris, 2000), in which media coverage of politics helps “to improve our understanding of public affairs, to increase our capacity and motivation to become active in the political process, and thereby to strengthen civic engagement” (Norris, 2000, p. 317). However, a more malign “media-malaise” perspective on the effects of mass media (Newton, 1999) posits quite different effects. This perspective is not to be regarded as a single, coherent theory but is rather an umbrella term for the many studies that highlight the negative effects of extant mass media coverage. The original concept of “video malaise” (Robinson, 1976) suggested that the increasing importance of TV was responsible for declining levels of political trust. More recently, a large body of literature has focused on the tendency of the media to frame politics as a strategic game and the resulting cynical and inefficacious electorate (Cappella & Jamieson, 1997; De Vreese, 2004; Elenbaas & de Vreese, 2008; Patterson, 1993; Pedersen, 2012; Valentino et al., 2001).

Therefore, media exposure does not necessarily lead to increased levels of knowledge and efficacy. First, gains in knowledge and efficacy may be attributable to specific media types, for example newspapers, TV, and radio. Pinkleton and Austin (2001) found that a reliance on newspapers significantly increased efficacy and decreased cynicism, whereas a reliance on TV and radio had no effect. Similarly, in a study of Spanish election campaigns,

Fraille (2011) found newspaper reading to be significantly associated with knowledge gains, whereas the results for radio were mixed and those of TV were insignificant. It is important to note, however, that these two studies were conducted in media environments in which TV and radio news are substantially commercially driven. This is not the case in the Danish media system, where televised news is, for all intents and purposes, only broadcast by two media institutions, DR and TV2, which are both bound by the same public service requirements (e.g., a commitment to diversity and impartiality in their news coverage). Similarly, news on the radio is also substantially dominated by DR, and the electronic media in Denmark therefore lack the ideological “echo chambers” found in, for example, the United States (Jamieson & Cappella, 2009). Therefore, by investigating the importance of media types in the Danish context, our analysis will indicate whether the previously observed differences between print and electronic media also hold when TV and radio news is produced under a public service system. Curran, Iyengar, Lund, and Salovaara-Moring (2009) suggest that countries with public service media systems tend to have smaller knowledge gaps among their citizens. As such, our study might challenge findings from studies conducted in countries with commercial media systems.

Furthermore, effects on knowledge and efficacy may also differ within specific media types. Among newspapers, for example, tabloids have repeatedly been shown to focus on strategic aspects of politics more than traditional broadsheet newspapers (Strömbäck & Aalberg, 2008; Pedersen, 2012). Based on the extant literature, we would therefore also expect the effects on knowledge and efficacy to differ between tabloids and broadsheets. The Danish media system is well suited to test this expectation, as it is characterized by a high level of daily newspaper readership (Esmark & Ørsten, 2008; Leckner & Facht, 2010). Following these considerations, we pose the following research question: To what degree does exposure to different types of media during an election campaign influence changes in political knowledge, internal efficacy, and external efficacy?

Study and Methods

This analysis is based on a large Danish Web panel arranged from February 2010 to September 2011 for the purposes of this study. A pilot study on the efficiency of various recruitment methods showed short text messages (SMS) to be a powerful recruitment strategy, especially because the marginal cost of inviting additional respondents is close to zero (Hansen & Pedersen, 2012). Therefore, approximately 130,000 text messages were sent to a random sample of listed Danish cell phone numbers, which resulted in the recruitment of 3,984 participants. These participants were supplemented with 4,527 participants from an existing Web panel hosted by TNS Gallup (Hansen, Kosiara-Pedersen, & Pedersen, 2012).

We did not consider the participants to be included in the panel until they had completed a lengthy online questionnaire and fully committed to participate in the online election campaign panel. When the prime minister called parliamentary elections on 26 August 2011, 8,511 participants had been recruited to the panel. An e-mail with a link to the first campaign survey was sent out that day, yielding a participation rate of 71% (fully completed interviews/e-mail invitations sent out). This definition follows the American Association for Public Opinion Research (AAPOR) definition (AAPOR, 2011, p. 38). For the duration of the campaign, panelists were divided into subgroups, and these subgroups were each surveyed five times during the election campaign. The response rate for these surveys ranged from 57% to 62%. Finally, 4 days after the election, which was held on 15 September 2011, all respondents were invited to take part in a post-election survey, which had a response rate of 68%. A total of 4,988 (58%) participants completed both the survey at the beginning of the campaign and the post-election survey. We consider these

response rates to be clearly satisfactory by current standards, and a follow-up analysis of panel representativeness also showed that the panel members were largely representative of the general Danish electorate in terms of demographic variables (age, gender, and geographical region), albeit better educated and stronger supporters of the opposition parties. Nevertheless, similar to other surveys focusing on political behavior, our data will likely overrepresent politically interested voters, but we address this by focusing our panel analyses on within-individual change and being cautious when making generalizations to the Danish electorate (details on the respondents are listed in the appendix).

Measures

Political knowledge was measured by the respondents' ability to place the political parties on the traditional left-right policy scale ranging from 0 to 10. The position on the left was described as "The public sector must make sure that everybody is taken care of," whereas the position on the right was described as "Each individual must take more responsibility for him or herself." With eight political parties, 28 party-pair comparisons can be made. Respondents were given 1 point for each correct comparison, such as placing the Social Democrats to the left of the Conservatives. The correct ordering of the parties was set to the average placement of each party made by all of the respondents. This average placement also corresponds to how experts in the field would have ranked the parties. Using this measure results in a highly reliable scale (start of the campaign, Cronbach's $\alpha = .97$; post-election, Cronbach's $\alpha = .96$).

The ideological placement of parties has been shown to be a good indicator of political knowledge (Delli Carpini & Keeter, 1993), and in multiparty systems this measure contains much more information than in two-party systems (Bhatti, 2010; Tóka, 2007). Furthermore, when compared to factual knowledge questions (e.g., the number of politicians in parliament), knowing how the parties are positioned relative to each other on the left-right scale can be seen as highly relevant information for voters when making a party choice (Gilens, 2001; Luskin et al., 2002).³ This is clearly the case in Denmark and other Nordic countries, where voters' self-placement on this left-right scale has been, for years, the single best indicator of party choice. As such, this item is used as an essential cue or heuristic shortcut for many voters to decide which party to vote for (Bengtsson et al., 2013; Hansen & Goul Andersen, 2013).

Internal efficacy was measured by the respondents' responses to the following five items: (a) "Sometimes politics is so complicated that a person like me cannot really understand what is going on"; (b) "Generally speaking, I do not find it that difficult to take a stand on political issues"; (c) "When politicians debate economic policy, I only understand a small part of what they are talking about"; (d) "Citizens like me are qualified to participate in political discussions"; and (e) "Citizens like me have opinions on politics that are worth listening to." Responses were measured on 5-point Likert scales, and the aggregate measure of internal efficacy was obtained by summing these responses (after reverse coding some items). This yielded a reliable scale (start of the campaign, Cronbach's $\alpha = .77$; post-election, Cronbach's $\alpha = .80$).

External efficacy was measured with the following items: (a) "Politicians do not really care what the voters think"; (b) "Usually you can trust the political leaders to do what is best for the country"; (c) "The politicians waste a lot of the taxpayer's money"; and (d) "Citizens like me do not have any influence on the decisions of the Parliament and Government." This yielded a reliable scale (start of the campaign, Cronbach's $\alpha = .61$; post-election, Cronbach's $\alpha = .68$).

Media exposure was measured by asking participants about their media consumption over the preceding 2 days in each survey during the campaign. These questions were included at the start of the campaign, over the course of the campaign, and the survey immediately after the election. The measures of media exposure were calculated as averages across these surveys. Our measures of media exposure focus on “traditional” mass media channels, such as newspapers, TV, and radio. It is, however, important to note that our measures of newspaper readership include online use of newspaper Web sites; we thereby account for the fact that, while use of the Internet as a news source is clearly on the rise, a very large part of the time spent online by news consumers is actually spent on the Web sites of such traditional news media (Danske Medier, 2013; Hoff, 2010; Karlsen, 2009).

Results

Overall Development

Considering overall development first, Table 1 shows the development of knowledge, internal efficacy, and external efficacy on the aggregate level and across certain sociodemographic groups during the campaign.

Table 1
Development of knowledge and efficacy

	Campaign start	Campaign end	Absolute difference	Relative difference (%)	Absolute change in gap ^a	n
Knowledge (0–100)	75.7	79.3	3.6	4.7		4,751
High school or less	70.0	74.8	4.7	6.7	−3.1***	945
Vocational	69.7	74.1	4.4	6.3		952
Short-term tertiary	76.2	80.4	4.2	5.4		528
Medium-term tertiary	78.6	81.9	3.3	4.2		1,435
Long-term tertiary	83.1	84.7	1.6	2.0		891
Female	72.6	77.3	4.7	6.5	−2.1***	2,231
Male	78.4	81.0	2.6	3.3		2,520
18–29 years old	74.2	79.9	5.7	7.7	−2.3*	487
30–59 years old	76.1	79.4	3.3	4.4		3,079
60+ years old	75.1	78.5	3.4	4.5		1,185
Low prior knowledge	59.5	70.0	10.6	17.8	−12.6***	2,113
High prior knowledge	88.6	86.6	−2.0	−2.3		2,638
Internal efficacy (0–100)	69.6	72.9	3.4	4.8		4,543
High school or less	63.4	67.3	3.9	6.1	−1.5*	899
Vocational	63.5	66.2	2.6	4.1		902
Short-term tertiary	68.2	72.0	3.8	5.6		506
Medium-term tertiary	71.9	75.9	4.0	5.6		1,380
Long-term tertiary	79.3	81.7	2.4	3.0		856
Female	66.1	70.2	4.1	6.1	−1.3***	2,087
Male	72.5	75.2	2.8	3.8		2,456
18–29 years old	66.8	71.5	4.7	7.0	−2.4***	448

(Continued)

Table 1
(Continued)

	Campaign start	Campaign end	Absolute difference	Relative difference (%)	Absolute change in gap ^a	<i>n</i>
30–59 years old	70.1	73.7	3.6	5.1		2,963
60+ years old	69.3	71.6	2.3	3.3		1,132
Low prior internal efficacy	51.2	59.5	8.2	16.1	–8.5***	1,934
High prior internal efficacy	83.1	82.9	–0.2	–0.3		2,609
External efficacy (0–100)	47.6	49.8	2.2	4.8		4,433
High school or less	44.1	46.7	2.6	6.0	–0.9	883
Vocational	42.4	44.7	2.3	5.5		905
Short-term tertiary	46.9	49.1	2.2	4.7		491
Medium-term tertiary	50.5	52.8	2.3	4.5		1,325
Long-term tertiary	52.8	54.5	1.7	3.2		829
Female	48.9	51.5	2.6	5.3	0.7	1,998
Male	46.5	48.5	1.9	4.2		2,435
18–29 years old	52.0	53.8	1.8	3.5	–0.5	416
30–59 years old	48.2	50.5	2.3	4.7		2,894
60+ years old	44.3	46.7	2.3	5.3		1,123
Low prior external efficacy	30.9	36.7	5.8	18.6	–6.7***	2,097
High prior external efficacy	62.6	61.6	–0.9	–1.5		2,336

Note. Differences between the beginning and end of the campaign are highly significant ($p < .005$) for all groups except internal efficacy for the group with high prior internal efficacy (tested by two-sided, paired sample t tests).

^aThe change in gap is the initial gap minus the gap when the campaign ends between female/male, young/oldest, and least/most educated.

* $p < .05$; *** $p < .001$ (changes in gaps; two-sided, paired-sample t test).

When measured across all participants, knowledge increased by 3.6 points, internal efficacy increased by 3.4 points, and external efficacy increased by 2.2 points, all on scales from 0–100 in absolute terms. These increases are highly significant ($p < .001$) and Hypotheses 1, 2, and 3 are therefore supported; knowledge, internal efficacy, and external efficacy increase during the campaign. The effects are arguably modest, just less than 5% for all three measures, when measured relative to their initial levels. To put these changes in perspective: With regard to the measure of knowledge, on average, voters were able to correctly order only one more of the 28 party pairs by the end of the campaign in comparison to before the campaign. Nevertheless, the absolute changes in knowledge and both types of efficacy are positive and highly significant ($p < .005$) for both genders, for all age groups, and for all educational subgroups.

However, as is also clear from [Table 1](#), the increases are not homogenous across these subgroups. Beginning with knowledge, we observe a narrowing of the gaps. On average,

women are less knowledgeable than men, but they learn significantly more during the campaign. Similarly, individuals with relatively low educational attainment begin with less knowledge but learn more during the election campaign than voters with long-term tertiary education. With respect to age, the pattern is quite remarkable because the gap actually reverses. Before the campaign, young voters knew the least; afterward, they knew the most. As noted earlier, this learning effect may be based on age-related cognitive skills and the fact that young people tend to have more unstable political attitudes. There is a larger proportion of floating voters in this group than among older groups, and it seems plausible that young voters who are searching for a preferred political party accumulate knowledge during the search.

Regarding internal efficacy, we also observe a significant narrowing of the gap between men and women. Similar to political knowledge, women begin with lower levels of internal efficacy, but they gain more internal efficacy during the election campaign. Additionally, regarding gains in internal efficacy across different educational groups, the gap also narrows; the lowest-scoring group at the start of the campaign, individuals with a high school education or less, narrows the gap with the highest-scoring group, individuals with long-term tertiary degrees. Finally, the gaps across age groups also narrow.

However, the development of external efficacy exhibits a different pattern. The gender gap actually widens during the election campaign. Women begin with higher levels of external efficacy, and they also gain more external efficacy during the election campaign. However, the widening of this gap is only marginally significant ($p = .098$). With regard to both education and age, the gaps in external efficacy tend to narrow, but these developments are insignificant.

What happens if, instead, we measure development in relative terms? Measuring gains in relative terms makes the closing of the gap more likely, but we have already observed a narrowing of the gaps in absolute terms for both knowledge and internal efficacy. Therefore, an analysis of relative gains simply confirms these findings. However, for external efficacy, measuring relative developments changes the conclusion regarding the gap across educational groups: The 6.0% increase for individuals with a high school degree or less is significantly higher ($p = .044$) than the increase of 3.2% for individuals with a tertiary education. For age and gender, the developments of the gaps remain insignificant, however, and the overall picture of the campaign effects does not change substantially between analyses based on absolute versus relative gains in this campaign.

The results become somewhat more spectacular if we, as in Norris and Sanders (2003), consider groups as defined by their initial values on the dependent variable. Knowledge, internal efficacy, and external efficacy increase considerably for the groups that begin with low levels, whereas the groups with high initial levels actually experience losses during the campaign. For example, the members of the group with low prior knowledge increased their knowledge levels by an average of 10.6 points, whereas the group with high prior knowledge experienced a significant *decrease* of 2.0 points. Nonetheless, we stress that these two results should not be taken as indicative of a causal effect of the election campaign. The notion that the election campaign has a causal effect leading to knowledge *losses* among already highly knowledgeable individuals seems highly improbable, especially when all groups categorized by gender and education invariably experience knowledge gains. Rather, these results are almost certainly biased by regression toward the mean.

If we adjust for regression toward the mean using the method suggested by Roberts (1980; see also Rocconi & Ethington, 2009), the average increase among participants with low prior knowledge decreases to 4.2 points (95% CI = 3.4, 5.1), whereas participants with high prior knowledge increase their knowledge by 3.0 points (95% CI = 2.6, 3.5). These values provide a clear example of how comparisons between groups formed by

initial values of the dependent variable can be seriously biased by regression toward the mean. Therefore, we urge future studies in this field to either correct for regression toward the mean or, better yet, to avoid comparisons across groups formed by initial levels of the dependent variable. Barring strong theoretical or practical reasons to investigate such groups, it is, in our view, much sounder to avoid the problems associated with regression toward the mean (and floor/ceiling effects; see Luskin et al., 2002) by focusing on gaps between groups based on age, gender, education, or comparable criteria.

Multivariate Analyses

We now turn to the multivariate analyses of the campaign effects. Tables 2, 4, and 5 each include three OLS regressions. The first regression in each table is based on

Table 2
Changes in knowledge (ability to order the parties left to right)

	Model 1	Model 2	Model 3
Initial level of knowledge	-0.45*** (0.02)	-0.45*** (0.02)	-0.46*** (0.02)
Age	-0.041* (0.02)		-0.054** (0.02)
Male	0.80 (0.47)		0.37 (0.48)
Vocational	-0.26 (0.83)		-0.10 (0.84)
Short-term tertiary	2.54** (0.83)		2.39** (0.83)
Medium-term tertiary	2.81*** (0.73)		2.52*** (0.72)
Long-term tertiary	2.97*** (0.73)		2.14** (0.74)
TV		0.42 (1.00)	1.60 (1.06)
Radio		0.42 (0.63)	0.55 (0.63)
Newspaper: free daily		0.47 (2.58)	0.84 (2.57)
Newspaper: tabloid		-0.37 (0.83)	-0.25 (0.86)
Newspaper: broadsheet		7.95*** (1.10)	6.58*** (1.15)
Constant	37.8*** (1.83)	36.2*** (1.64)	37.8*** (1.86)
<i>n</i>	4,751	4,751	4,751
<i>R</i> ²	.267	.267	.272
Adj. <i>R</i> ²	.266	.266	.270

Note. Education reference category: high school or less. Robust standard errors are in parentheses.
p* < .05; *p* < .01; ****p* < .001.

sociodemographic characteristics, the second is based on media use, and the third model is the full model. The initial level of the dependent variable is included in the models as an independent variable to account for ceiling effects and regression toward the mean. The coefficient of the initial level is negative and significant in all models, indicating a robust ceiling effect and regression toward the mean. It also means that when we interpret the other coefficients in the models, we must remember that the initial level effect is controlled for (i.e., it is the effect of the independent variables when the initial level is held constant).

Beginning with the effect on knowledge, the declining knowledge gap between different educational groups shown in Table 1 might lead one to expect that education has an insignificant or even detrimental effect on learning. However, the multivariate regressions in Table 2 show that this is not the case. When controlling for initial knowledge levels, individuals with high educational attainment learn significantly more during the election campaign, in accordance with Hypothesis 4.

It is important to note that the results in Table 1 and those from our multivariate regression measure two different concepts. Table 1 compares development across groups defined by their education, whereas the regression estimates the impact of education, all else being equal. In other words, the regression shows that if a voter with a certain initial level of knowledge is highly educated, he or she will learn more during the campaign than if this individual did not have an education. However, voters with high education typically begin with higher levels of knowledge, as shown in Table 1.

We can illustrate this by using the regression coefficients from Model 3 to calculate estimated knowledge gains for the different groups (using the margins command in STATA 12). As shown in Table 3, if we assume that voters across the different educational levels begin with the mean level of knowledge (75.7), the estimated knowledge gains for voters with a tertiary education are high and significantly higher than those for voters with a vocational education and voters with a high school degree or less. Based entirely on these results, it would be tempting to conclude that the knowledge gap increases during an election campaign. However, if we instead estimate knowledge gains using the initial levels

Table 3
 Estimating knowledge gains (95% confidence interval in parentheses)

	Estimates with initial knowledge level at grand mean of 75.7	Estimates with initial knowledge level at subgroup mean
High school or less (mean = 70.0)	2.1 (1.0, 3.2)	4.7 (3.5, 5.9)
Vocational (mean = 69.7)	1.6 (0.5, 2.7)	4.4 (3.3, 5.5)
Short-term tertiary (mean = 76.2)	4.4 (3.3, 5.5)	4.2 (3.0, 5.3)
Medium-term tertiary (mean = 78.6)	4.6 (3.8, 5.4)	3.3 (2.5, 4.1)
Long-term tertiary (mean = 83.1)	5.1 (4.2, 6.0)	1.6 (0.8, 2.5)

Note. *N* = 4,751.

Table 4
Changes in internal efficacy

	Model 4	Model 5	Model 6
Initial-level efficacy	−0.29*** (0.01)	−0.29*** (0.01)	−0.31*** (0.01)
Age	−0.052*** (0.01)		−0.062*** (0.01)
Male	0.94* (0.37)		0.65 (0.38)
Vocational	−0.94 (0.57)		−0.77 (0.57)
Short-term tertiary	1.66* (0.67)		1.50* (0.67)
Medium-term tertiary	3.04*** (0.54)		2.72*** (0.54)
Long-term tertiary	3.30*** (0.58)		2.52*** (0.60)
TV		−0.47 (0.80)	1.03 (0.86)
Radio		0.45 (0.49)	0.63 (0.49)
Newspaper: free daily		−2.67 (1.66)	−2.19 (1.66)
Newspaper: tabloid		−1.26 (0.76)	−0.96 (0.77)
Newspaper: broadsheet		8.28*** (1.10)	6.35*** (1.14)
Constant	24.1*** (0.99)	22.2*** (0.80)	24.5*** (1.00)
<i>n</i>	4,543	4,543	4,543
<i>R</i> ²	.166	.160	.173
Adj. <i>R</i> ²	.165	.159	.171

Note. Education reference category: high school or less. Robust standard errors are in parentheses.
p* < .05; **p* < .001.

of knowledge within each subgroup, we obtain very different results. In this case, the gap narrows, mirroring the results from [Table 1](#).

Hypotheses 5 and 6 align with the results in Models 1 and 3, as age is negatively correlated with learning, whereas the relationship between gender and learning is insignificant. That is, when controlling for other variables, including their initial levels, younger voters tend to learn more than older voters, and more educated voters tend to learn more than less educated voters. It is worth noting that although the effects of education and age are statistically significant, they are nonetheless fairly modest. In the fully specified model, short-, medium-, or long-term tertiary education increases learning by less than 3 points. Moreover, the coefficient for age is −.054, meaning that an 18-year-old, on average, increases just 2.7 points more than a 68-year-old.

Table 5
Changes in external efficacy

	Model 7	Model 8	Model 9
Initial-level efficacy	-0.23*** (0.01)	-0.23*** (0.01)	-0.24*** (0.01)
Age	-0.020 (0.01)		-0.042** (0.01)
Male	-1.06** (0.39)		-0.92* (0.39)
Vocational	-0.58 (0.59)		-0.62 (0.60)
Short-term tertiary	0.30 (0.71)		0.30 (0.71)
Medium-term tertiary	1.13* (0.56)		1.01 (0.56)
Long-term tertiary	1.21* (0.61)		1.14 (0.64)
TV		0.16 (0.85)	1.15 (0.93)
Radio		1.92*** (0.52)	2.18*** (0.52)
Newspaper: free daily		-1.85 (1.78)	-1.46 (1.78)
Newspaper: tabloid		-2.87*** (0.80)	-2.63** (0.82)
Newspaper: broadsheet		0.52 (1.13)	-0.076 (1.23)
Constant	14.3*** (0.91)	12.2*** (0.64)	14.4*** (0.92)
<i>n</i>	4,433	4,433	4,433
<i>R</i> ²	.111	.112	.117
Adj. <i>R</i> ²	.109	.110	.115

Note. Education reference category: high school or less. Robust standard errors are in parentheses.
p* < .05; *p* < .01; ****p* < .001.

The media variables confirm the importance of differentiating not only between TV, radio, and newspapers but also between different types of newspapers. Readership of traditional broadsheet papers has a highly significant effect on learning, whereas tabloids do not seem to increase learning, similar to TV and radio.⁴

With regard to internal efficacy, the analyses in Table 4 demonstrate that internal efficacy is affected by the same variables as knowledge. Education has a positive impact on increases in internal efficacy, whereas age has a negative impact. In Model 4, gender also has an impact, as men increase their internal efficacy significantly more than women. However, when controlling for other variables in the full model, this effect becomes insignificant. For the media variables, we once again identify a positive impact of broadsheet papers, whereas the effects of all remaining media variables are insignificant.

Finally, external efficacy is the dependent variable in Table 5. The first demographic model shows that education is positively correlated with increases in external efficacy. However, these effects become insignificant in the full model. Age is, once again, negatively correlated with increases in both the purely demographic model and the full model. As demonstrated in the bivariate analyses of gender gaps, being male means that gains in external efficacy are smaller, and in this multivariate model this difference is significant.

When considering the media variables, we find that reading a tabloid newspaper actually decreases external efficacy. This result aligns well with the literature showing that strategically framed news stories, which dominate tabloid election campaign coverage, may cause cynicism and diminish trust in the political system. In contrast, radio has the opposite effect, as it increases external efficacy among its listeners. This observation may be explained by the strong tradition of public service radio in Denmark. These effects are significant even in the full model, which shows the substantial relevance of the media during campaigns.

Conclusion

From the civic perspective on election campaigns, the results of this study are in many ways positive; not only did the study expand on previous studies' findings of knowledge gains during election campaigns to a multiparty system, but we have also shown that election campaigns can have a positive effect on political efficacy, both internal and external. These increases were rather modest in size, but they were nevertheless clearly significant and found across gender, age, and educational groups.

Furthermore, the gaps in knowledge and internal efficacy across different age groups, genders, and educational groups actually narrow during the campaigns. This finding may seem somewhat counterintuitive; for example, individuals with a high level of education tend to begin with a higher knowledge level, and higher levels of education also tend to lead to greater gains during the election campaign; hence one might, all else being equal, expect the opposite result. However, our analysis demonstrates that such an analytical approach is inappropriate. All else is rarely equal, as highly educated people begin the campaign with higher levels of knowledge and efficacy, and the educational effect during the election campaign is thereby offset by the effect of the initial level. We contend that analyses of knowledge gaps, or other gaps, should be bivariate; controlling for other variables is simply misleading because in real life, different groups have different initial levels. Similarly, comparisons between groups, as defined by initial levels of the dependent variable, should clearly be discouraged to avoid problems with regression to the mean.

Do these narrowing knowledge gaps refute Tichenor's (Tichenor et al., 1970) knowledge gap hypothesis? Not necessarily. It is important to note that Tichenor's hypothesis posited that different socioeconomic groups acquired new information at different rates. Many election campaigns are arguably not situations in which new information is disseminated to the public; rather, they are situations where information already publicly available is dispersed with greater intensity. This was decidedly the case in the election campaign investigated in this study, and our results may therefore very well align with the original formulation of Tichenor's hypothesis. Highly educated voters may learn information faster than voters with a low level of education, but the increased information intensity during election campaigns may provide this latter group with good opportunities to, at least partially, catch up. This line of reasoning also aligns well with Zaller's (1992) analyses of the relationship between campaign intensity and effects among the least sophisticated.

That this study was conducted in a Danish context is of course pertinent when discussing the findings; the relatively modest gains in knowledge and efficacy may partially be explained by the length of the election campaign in Denmark. First, the small gains in knowledge and efficacy may be a reflection of the short and intense election campaign in Denmark; the election was held just 20 days after being called by the prime minister. Compared to other parliamentary systems, this is a rather short campaign (Stevenson & Vavreck, 2000), and gains in knowledge and efficacy may be larger in countries with longer campaigns. However, the second possible explanation for these small effects is that the election campaign is, in reality, quite long. The era of permanent campaigns, in which politicians constantly strive to increase popular support with the aid of modern marketing tools (Blumenthal, 1982; Needham, 2005), has arguably also begun in Denmark. Therefore, the limited development of knowledge and efficacy may be a result of a permanent campaign that continuously keeps voters relatively up to date on politics. In addition, the modest increases may also reflect that the average Danish voter began the campaign with relative high levels of knowledge. Compared to, for example, the American voter, the Danish voter is on average significantly more knowledgeable on political issues (Curran et al., 2009). In this regard, it is also noteworthy that the Danish voter faces a comparably more difficult task because of the multiparty system; the voter must choose between not just two parties, but between at least eight parties, differing on several policy dimensions. Comparing our general finding, that political knowledge and efficacy increase during campaigns in a multiparty system, to the American studies in a two-party system suggests that civic empowerment through campaigning is universal across party systems. Furthermore, it also suggests that in both political systems with candidate-focused campaigns, as in the U.S., and the Danish party-centered system, voters actually learn from campaigns.

What about the Danish public service media system? The multivariate analyses indicated that media use had a significant influence on political knowledge, external efficacy, and internal efficacy. Broadsheet readers experienced a significant increase in both knowledge and internal efficacy. In contrast, tabloid readers became significantly less externally efficacious, suggesting that the tabloids may be partially to blame for cynicism and mistrust among the electorate. In other words, voters tend to be affected by what they are exposed to; you become what you read. Moreover, it is noteworthy that, in spite of the public service requirements faced by TV and radio news, these news sources generally did not have significantly positive effects on knowledge and efficacy. These results are, at first glance, perhaps not particularly surprising, as previous studies in other media systems have found a similar pattern (e.g., Fraile, 2011; Pinkleton & Austin, 2001). However, the fact that we also find this pattern in the Danish public service context is especially interesting, as it might indicate that the absence of knowledge gains from TV and radio is not merely a result of the media system and, for example, commercialism and strategic framing of political news. Rather, at least some of the differences in effects between newspapers and TV might also be attributable to the nature of the medium itself. Watching TV is simply a less intense and focused way of consuming news compared to reading a newspaper, and even public service TV may therefore have a relatively limited potential for making voters more knowledgeable during an election campaign.

Notes

1. The two concepts are also sometimes labeled “competence” and “responsiveness,” respectively (Aish & Jöreskog, 1990; Almond & Verba, 1963).

2. In the present study, we limit ourselves to studies focusing on factual learning. Therefore, we disregard studies in which the dependent variables are, for example, vote choice, candidate evaluations, or priming (e.g., Franz & Ridout, 2007; Fridkin et al., 2007; Iyengar et al., 1984). Furthermore, we exclude studies that are not longitudinal (e.g., Eveland & Scheufele, 2000).

3. The surveys also included factual questions such as the parties in government, the unemployment rate, the number of seats in the Danish parliament, and the party affiliations of specific politicians. Using these questions as a knowledge measure does not alter the overall conclusions of the study.

4. Several previous studies (e.g., Kenski & Stroud, 2006) also include political interest as an independent variable when explaining (changes in) knowledge and efficacy. Including a measure of political interest (measured on a scale of 0–10) in our models (Tables 2–4) does not alter the results significantly and only marginally increases the degree of explained variance; political interest is statistically significant and positively related to gains in knowledge and both types of efficacy, but the addition of this variable does not change the significance or direction of any other variable. Thus, we exclude political interest from our models, as it may very well be highly endogenous to our dependent variables. Brussino et al. (2011), for example, find efficacy to be a cause rather than an effect of political interest. In addition, given the strong effects of age and of media types, one might question whether one could find any interactive effects of these variables. However, in additional models testing for such interactions (not shown here), these interactions were insignificant for all media types. Additional results are available from the authors upon request.

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Appendix: Panel participants and the Danish electorate

	Panel %	<i>n</i>	Danish citizens ages 18–69 (%)
Male	53	2,647	50
Age			
18–29	10	521	20
30–59	65	3,230	60
60+	25	1,237	19
Education			
High school or less	20	982	36
Vocational education	20	991	35
Short-cycle tertiary	11	534	5
Medium-cycle tertiary	30	1,474	16
Long-cycle tertiary	19	909	8
Geographical region			
Copenhagen area	32	1,589	30
Sjælland	14	718	15
Syddanmark	21	1,066	21
Midtjylland	22	1,122	23
Nordjylland	10	493	11
2011 vote			
Government/supporting party	40	1,943	49
Liberal party	21	1,031	27
Conservative party	6	310	5
Danish People's party	6	301	12
Liberal Alliance	6	301	5
Opposition	59	2,903	50
Social Democrats	23	1,123	25
Social-Liberal party	13	645	10
Socialist's People's party	13	632	9
Unity List	10	503	7
Other	1	71	1

Note. Data for panel participants are based on information from participants completing both the survey at the start of the election campaign and the survey after the election. Population data are from Statistics Denmark (www.statistikbanken.dk). Due to the large sample size, the confidence intervals for the sample are relatively narrow and thus do not overlap with the population data in most cases; 95% confidence intervals for the sample are $\pm 1\%$ to 2% across groups.