POLICY CONSIDERATIONS ON FACEBOOK:

AGENDAS, COHERENCE AND COMMUNICATION PATTERNS IN THE 2011 DANISH PARLIAMENTARY ELECTIONS

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ABSTRACT

Given the importance of issue competition in a West European context and the growing use of Facebook in elections, this paper studies how politicians use Facebook to shape the campaign agenda. We analyze the issues addressed in 6388 Facebook posts by candidates in the Danish 2011 parliamentary election. A limited share of Facebook updates is dedicated to issues. The Facebook agenda did not respond to standings in the polls, nor to the media agenda or public agenda. Comparing issue engagement of new candidates and re-running candidates we find that the Facebook campaign agenda is not simply politics as usual.

KEYWORDS: Facebook, political campaign, elections, agenda setting, issues, individualization, automated content analysis

Introduction

Since the Obama campaign in 2008, social media have become an integral part of election campaigns in the Western world (e.g. Enli and Moe, 2013; Gibson et al., 2014). A growing body of research gives insight into which politicians are most likely to use social media in their campaign and for what purpose Facebook and Twitter are used (e.g. Baxter and Marcella, 2012; Enli and Skogerbø, 2013; Graham et al., 2013; Jackson and Lilleker, 2011; Klinger, 2013; Koc Michalska et al., 2014; Lassen and Brown, 2010). Central in these studies is the question whether campaign strategies are adapted to the technical and social characteristics of these new media. While some argue politicians campaign differently on Twitter or Facebook than in the off-line world (e.g. Grant et al., 2010, p. 599), others see campaigning on social media platforms to be *politics as usual* (e.g. Normann Andersen and Medaglia, 2009). This paper adds to this literature by studying how politicians use Facebook to shape the issue agenda during election campaigns.

Given that issue competition has become increasingly important in the West European context, it is crucial to have knowledge on how issues evolve and how social media affect this competition (Meguid, 2005, Green-Pedersen, 2007). Extant previous literature advocates the role of issues in electoral preference formation (Adams et al., 2005; Tomz and van Houweling, 2008) and these studies also shed light on the stronger effects by opinions on issues that are salient (Krosnick, 1988). Issues play an important role in off-line campaigning and on campaign websites (Druckman et al., 2010; Sulkin et al., 2007; Xenos and Foot, 2005). Since politicians use Facebook more to send information rather than for dialogue with potential voters (Baxter and Marcella, 2012; Klinger, 2013), an important question is what they actually talk about: what does the issue agenda on Facebook look like?

We address this question by studying the role of 12 political issues on candidate's Facebook pages in the 2011 Danish Parliamentary election campaign. Issues play an

important role in Danish politics (Green-Pedersen, 2007), and Facebook has become an
important information channel for both voters and politicians during Danish elections
(Skovsgaard and Van Dalen, 2013).

Previous research has shown that candidates address different issues on different
campaign platforms (Benoit et al., 2011; Elmelund-Præstekær, 2011; Norris et al., 1999) and
that issue agendas online are different from off-line agendas (Sulkin et al., 2007; Sweetser et
al., 2008; Xenos and Foot, 2005;). In line with these studies we explore whether the
campaign agenda on Facebook also has its own characteristics and dynamics, shaped by the
technical peculiarities and the new campaigning possibilities that this campaign channel
offers. First, we investigate to which extent candidates use their social media presence to
discuss political issues. Second, we study whether the Facebook agenda reflects the issue
salience in the party manifesto or whether candidates individualize the agendas on their
Facebook profiles. Finally, we study the dynamics of the social media agenda over the course
of the campaign, asking whether the news media and changes in public opinion influence
issue discussions on Facebook. In line with previous research on issue agendas on websites
(Sulkin et al., 2007; Xenos and Foot, 2005) and on the use of Facebook in election campaigns
(Enli and Skogerbø, 2013; Skovsgaard and Van Dalen, 2013), our analysis pays attention to
the difference between sitting MP's who re-run for office and new candidates who challenge
them.[1] Together, this gives insight into how strategic politicians are when they use Facebook
to shape the campaign agenda.

During the 2011 three-week Danish parliamentary election campaign, we collected all
Facebook updates of 250 candidates from nine parties of whom 217 actively used their public
Facebook pages throughout this campaign. We employ dictionary-based quantitative text
analysis on the harvested Facebook updates and analyze the distribution of issue attention in
light of the agenda set out by the parties in their manifestos. We extend this analysis then and

link the social media communication with politics discussed in the media and voters'

perception of the most important problems. For the latter two we use issue salience measures

from a news media content analysis of the campaign on one hand (Hansen and Bordacconi,

2013), and the voters perception of the agenda from a 21-day rolling cross section survey

carried out by TNS Gallup during the election campaign on the other (Hansen and Kosiara-

Pedersen, 2014a). Finally, we study how Facebook agendas react to politicians' standings in

the polls, as suggested by Benoit et al. (2011, p. 467).

The paper proceeds as follows. First, we discuss the peculiarities of Facebook as a

campaign channel and formulate our research questions. We then describe our case, data, and

methodological approach. We thereafter analyze the issue discussions on the candidates'

Facebook profiles, and proceed with the analysis of interactions between different platforms.

Our concluding section summarizes the results and addresses the questions whether social

media change the nature of political campaigns and how strategic politicians are in their use

of Facebook.

Facebook agenda: controlled, semi-public, and flexible

Due to the low-cost structure, multimedia character, and the possibilities for broad and

narrow casting, new media have become an important campaign platform (Hill, 2009;

Panagopoulos, 2009). New media are still complementary to traditional media and are not

likely to replace other campaign activities completely (Towner and Dulio, 2012, p. 99).

Nevertheless, websites, blogs, Facebook, and Twitter have become an integral part of the

campaign mix, both for politicians and for voters (Hansen and Kosiara-Pedersen, 2014b;

Skovsgaard and Van Dalen, 2013). Since setting the campaign agenda can give politicians

important electoral advantages (e.g. Baines et al., 1999; Druckman et al., 2010), we can

expect candidates to be strategic in the way they address issues on new media, including

Facebook. Scholarly debate about the use of new media in political marketing is often

centered around the question whether online campaigning is no more than old wine in new

bottles (Margolis and Resnick, 2000) or whether they change the strategic behavior of

politicians (see for example Foot and Schneider, 2002). The same question has been asked in

relation to political agenda-setting on candidates' websites. Druckman et al. (2010) found that

issue engagement on candidate websites can largely be explained by the same strategies as

candidates' use off-line. Xenos and Foot (2005) and Sulkin et al. (2007) also found

similarities in off-line and online issue engagement. However, their studies also showed that

the particular cost structure, capacity, and audience of websites change issue priorities. This

leads Xenos and Foot (2005, p. 182) to conclude that "the peculiar aspects of the medium

itself (…) introduce new wrinkles into the broader campaign information environment".

This conclusion is in line with several other studies which show that campaign

agendas vary across communication channels. Research by Benoit et al. (2011), Elmelund-

Præstekær (2011), Norris et al. (1999) and Sulkin et al. (2007) has shown that the level of

control, the audience, and the flexibility of communication channels have implications for the

agenda on different campaign channels. Like candidate websites, the medium Facebook has

peculiar characteristics that can be used strategically to set the campaign agenda.

First, Facebook messages are an *unmediated* source of campaign information.

Facebook is a social medium, a web-based service where politicians create a profile, post

messages, and can respond to messages from others in their network (Boyd and Ellison,

2007, p. 211). Although supporters may post comments on the Facebook wall of politicians,

the Facebook updates are fully controlled by the politician. Due to this control, politicians can

be more strategic in determining which issues to address than, for example, in interviews or

debates (Benoit et al., 2011). Elmelund-Præstekær (2011) found considerable differences in

the issue agenda of Danish candidates between platforms depending on the level of control

over messages (see also Norris et al., 1999).

Second, Facebook is a *semi-public* medium (Enli and Skogerbø, 2013, p. 758), since it combines features of private communication and public communication. Facebook has a less public character than, for example, Twitter and is aimed more at an internal audience rather than the population at large. In comparison, Twitter has much more limited reach and is more important channel for contact with journalists and other elites. Tweets form a regular sources for election coverage and journalists are often in the twitter networks of politicians (Broersma and Graham, 2012; Verweij, 2012). Facebook users who link to politicians are often also connected with these politicians off-line (Normann Andersen and Medaglia, 2009, p. 110). This could have implications for the type of issues which politicians address. Sulkin et al. (2007) showed that issue agendas were more in line with issue ownership on candidate websites than in ads, since websites are mainly aimed at supporters. Williams et al. (2005) showed that differences in the issue agendas of presidential candidates were more pronounced on blogs, where communication is more personal, than on websites. Elmelund-Præstekær (2011) also found that issues agendas depend on whether messages are mainly addressed to supporters or to an external audience. Due to this semi-public character, campaign communication on Facebook is well suited for a personalized campaign. In practice, private and public messages are often mixed on Facebook (Enli and Skogerbø, 2013). Given the high degree of personalization, politicians might also use the medium to individualize their issue communication and create their own policy profile rather than follow the party line (Giebler and Wessels, 2013).

Third, Facebook is highly *flexible*, requiring nothing but an internet connection to update. This gives politicians the possibility of responding immediately to new issues which may emerge over the course of the campaign and decide on a day-to-day basis which issues to talk about, thus making the campaign agenda more dynamic. Norris et al. (1999) found considerable difference between the agenda laid out in the party programs before

elections and the agenda expressed in press releases during the campaign. Social media have

made it even easier to respond directly to new developments during the campaign than press

releases (Bode et al., 2011).

In sum, the level of control, the semi-public character, and its flexibility offer

politicians the possibility of using Facebook strategically to set the campaign agenda. Since

issue engagement on Facebook is underexplored, we formulate four research questions to

study whether and how these characteristics indeed impact the campaign agenda on

Facebook. In the discussion of agenda-setting on Facebook, we pay particular attention to the

differences between sitting MP's who are re-running for office and new candidates who

challenge them. Given their different electoral positions, these two types of candidates can be

expected to apply different strategies in their issue engagement on Facebook. Integrating

insight from marketing and political science, Butler and Collins (1996) argue that the

candidates' electoral status should affect their campaign strategies. In line with this, Baines et

al. (1999) showed that incumbent parties have a strategic advantage over the opposition in

determining the most important issues of the day. Sulkin et al. (2007) and Xenos and Foot

(2005), however, found only minor differences in their comparisons of issue engagement on

the websites of incumbents and challengers.

Talking about issues

The first question that arises is how many of the updates on Facebook are actually about

issues. Despite the possibilities that Facebook offers for direct interaction with audiences,

politicians mainly use this social medium for broadcasting. In Denmark, Duvander Højholt

and Kosiara-Pedersen (2011) found little two-way communication on the Facebook profiles

of MPs. Klinger (2013) showed that 56 per cent of Facebook updates of Swiss politicians is

information or electoral propaganda. In Scotland broadcast posts also make up the majority of

campaign communication on Facebook, as politicians "gave their personal thoughts on policy issues, campaign events, media coverage of the election, etc." (Baxter and Marcella, 2012, p. 114). Not all of these messages are about policy and the attention for issues may vary depending on the electoral context. During the 2012 primaries Republican Presidential candidates devoted 50 per cent of their communication on Twitter to electoral issues, such as the economy, health care, or foreign affairs (Conway et al. 2013). Candidates in the 2010 congressional elections in the United States dedicated 17 per cent of their Twitter messages to policy, which is less than the attention for campaign announcements, and comparable to negative campaigning and personal messages (Gainous and Wagner, 2014). It remains an empirical question to which extend these findings can be generalized beyond the American context, given the importance of issue considerations in Western European politics and the less personalized and less negative Western European campaign (e.g. Elmelund-Præstekær and Mølgaard Svensson, 2014; Plasser and Plasser, 2002). We thus formulate the following research question:

Research Question 1: How much talk by candidates on Facebook is about issues?

If politicians use Facebook strategically to shape the campaign agenda, we could expect differences in the issue attention between new candidates and those re-running. Re-runners already serve in Parliament and on various committees, which gives them more possibilities of expressing their issue and policy preferences, both in public and in Parliament. Hence, it is expected that an average voter or even a supporter of a given party has more information on the MP's policy preferences. In traditional campaigns, candidates who re-run for office have a strategic interest in focusing on character and personality, where they have an advantage

compared to less well-known challengers (Xenos and Foot, 2005, p. 173). Conversely, although challengers are not new to politics and some voters might know them, they had far less possibility on articulating their issue positions in any given media outlet or political forum. It could thus be expected that when new candidates are in full control of their political message (such as their own Facebook profile), they will mention issues more frequently in order to introduce and clarify their issue positions to their supporters or anybody from the general public following their communication thread. Xenos and Foot (2005) did not find a relationship between incumbency status and attention for issues on politicians' websites. However, given the more personal nature of Facebook and the almost natural interaction between personal and political messages, Facebook is a more likely place to find such differences.

Internal coherence

Another important question about the Facebook campaign agenda is the degree of individualization of the agenda. Norris et al. (1999, p. 62) differentiate between the ideal campaign agenda, which is expressed in the party program at the beginning of the campaign, and the tactical agenda, which can be observed in daily communication during the campaign, for example in press releases. The overlap between the ideal and the tactical agendas shows the internal coherence of the campaign. It reveals "how closely (…) the communications match the overall objectives of strategy" (Norris et al., 1999, p. 62). Although some have argued that social network media can be used to gain access to new voters (Utz, 2009), most researchers see social media as a tool for maintenance rather than conquest communication (Maarek, 2011). The usefulness of issue trespassing and reaching out to undecided voters by addressing the issues they care about might therefore be limited compared to off-line

communication. This would mean that politicians follow the party line in their issue

communication on Facebook.

However, candidates in Danish elections do not only campaign against politicians

from other parties, but are also involved in competition with politicians on the same party list.

Given control which individual politicians have over the channel and its semi-public

character aimed mainly at an internal audience, Facebook is well suited for intra-party battles.

(Skovsgaard and Van Dalen, 2013). Because supporters of their party mainly access their

profiles, it is a useful platform to develop and accentuate their own profile and differentiate

themselves from other members of their party (Skovsgaard and Van Dalen, 2013). Since

Facebook profiles are bound to individual politicians, they offer the opportunity for a large

degree of individualization. Another reason why the Facebook campaign might have low

coherence is social filtering: politicians may use Facebook to test messages, before

distributing them to other media (Levy, 2010). Enli and Skogerbø (2013) showed that the

social media campaign of Norwegian politicians was characterized by individual initiatives

and personalized communication. Such a personalized campaign may contradict the central

communication strategy of the party, even in party-centered elections. This raises the

question how much internal coherence there is between the (individualized) tactical campaign

issue agenda and the (centralized) ideal campaign issue agenda.

*Research Question 2: How coherent is the Facebook campaign issue agenda with the
ideal campaign issue agenda expressed in the party manifestos?*

It can be argued that there is a stronger incentive for new candidates than for re-runners to

individualize their campaign. Danish Members of Parliament generally show strong party

discipline. Therefore, they are more likely to communicate in line with the central party line,

which they themselves might have helped to determine. New candidates are less likely to
have taken part in setting up the party program. They still need to create a profile for
themselves and present themselves as an alternative to the better-known candidate who is
already in Parliament. Therefore, it will be interesting for them to present a distinct policy
profile. Based on a survey among political candidates in 15 countries, Elmelund-Præstekær
and Schumacher (2014) showed that less experienced candidates place themselves further
from the party than more experienced candidates. If politicians take advantage of the
possibility for individualization offered by Facebook, we could expect the agenda of new
candidates to be more individualized than the agenda of re-runners.

Moving off message?

Due to the flexibility of Facebook, the agenda of this social medium can be expected to be
responsive to changes in the media agenda and in public opinion. Previous research has
shown that the public, political, and media agendas mutually influence each other (Walgrave
et al., 2008; Soroka, 2002; Vliegenthart and Walgrave, 2011). Studies into campaign
dynamics off-line show that there is limited influence from the media to politicians
(Hopmann et al., 2012; Norris et al., 1999). According to Walgrave and Van Aelst (2006),
journalists are more reactive to politicians during election campaigns and give more room for
politicians to get their message across. At the same time, politicians are more focused in their
effort to stay on message.

These relations may, however, be different in an online environment, which is more
dynamic and flexible. Xenos and Foot (2005, p. 183) expect that online campaigning may
"alter the dynamic sense in which campaign messages evolve over the course of the election
season." Since social media like Facebook are more flexible than other campaign channels,
the social media agenda may be more reactive to the public and media agenda (Bode et al.
2011). Whenever an issue becomes more salient in the media or for the public in general,

political candidates might be triggered to react to this on their Facebook pages. Politicians can strategically "ride the media wave" and address these issues on which they have an advantage over their opponents (Thesen, 2011, p. 51). Sweetser et al. (2008) show this responsiveness for another campaign platform. They showed that the blog posts of Presidential candidates in 2004 responded to the media agenda. The flexibility and ease of use of Facebook is ideal for this strategy, since it decreases the reaction time. We compare the Facebook agenda to the media and public agenda to see whether politicians use this possibility strategically.

Research Question 3: Does attention to issues on the Facebook agenda react to attention to these issues on the media agenda and the voters' agenda?

Similarly, we expect that politicians react to change in the polls and move off message when they see that their campaign is not working and they are losing ground to their opponents. Harris et al. (2005) showed that the Conservative party changed its issue focus in their press releases during the 2001 British elections. Although others have argued that campaigns are not easily adjusted, the authors argue that "the Conservative Party did change their strategy in an attempt to bolster a weak position" (Harris et al., 2005, p. 108). Previous research on the Facebook agenda offers some support for this expectation. Benoit et al. (2011) found considerable variation between the Facebook agenda and other campaign agendas, and argue that: "variations in message emphasis can be desirable when candidates respond to changing conditions in the campaign environment or attempt to turn around a campaign that is struggling." (Benoit et al., 2011, p. 466-7). Our expectation is that candidates who are doing well in the polls will stick to their successful message, which leads to less change and more coherence with the ideal campaign agenda. Candidates who are falling behind in the polls

could feel the need to adjust their message and change the issue focus away from the ideal

campaign agenda. This leads to the following research question:

Research Question 4: Is the internal coherence of the Facebook agenda influenced by changes in a party's standings in the polls?

Case selection and data

The Danish 2011 campaign is a good case to test how strategic politicians are in their use of

Facebook to shape the issue agenda. First, political competition in Denmark has increasingly

focused on issue competition (Green-Pedersen, 2007). Prior elections in 2005 and 2007 were

to a large extent dominated and determined by the immigration issue. In 2011, the issues

changed somewhat due to the economic crisis, which focused attention on unemployment and

welfare state issues more broadly. Hence, immigration played a less important role compared

to earlier (Stubager, 2012). As issue competition is one of the explanatory factors for

electoral outcomes, having knowledge on how social media might affect this competition is

obviously important. Secondly, the Danish case is valuable because Denmark has a high

internet penetration. More than 2.9 million Danes use Facebook, which is approximately 63

per cent of the population (Internetworld stats, 2012). Since issue competition is important

and Facebook use is high, the 2011 Danish elections provide a good test bed for the impact of

social media on campaigns.

Data collection

We harvested all active Facebook pages from any candidate during the Danish parliamentary

election campaign that took place between August 26 and September 15, a total of 21 days.

Since the formulated expectations only concern the period when the candidates are in

'campaign mode', we are only interested in investigating what candidates running in parliamentary elections are saying during the time when the campaign is hot. This restricts the period we are investigating to the period from when the prime minister calls the election to election day.

Data access is a major concern given Facebook's privacy policy. Accordingly, the candidate had to provide open access to their Facebook page in order for this to be scraped.[2] We collected all activity on the profile pages and used the additional information available on author and date to organize these. Based on the information of the author, we can link what the candidate said to his or her individual characteristics which we have coded previously – such as whether the candidate is a re-running MP or new candidate. The other main advantage of each and every status is the date stamp. Based on the date stamp we can partition the text gathered from the candidates and, thus, we can look at changes throughout the campaign. For each section of our analysis, we will detail which exact texts were used.

When it comes to the number of candidates analyzed we focus on those running for a party (784 out of 804, 20 independent candidates). From the public pages identified, 250 candidates had profiles with activity throughout the campaign, but 33 of these did not contain any message posted directly by the candidate who owned the page, resulting in 217 used for the analysis of Facebook communication (around 28% of the candidates). From these, we collected 6388 posts comprising status updates and text accompanying pictures or links posted by the candidates on their wall.[3] From the candidate text universe, we can obtain the messages that the candidates are putting forward which enable us to investigate what candidates discuss on their pages.

--- Table 1 around here ---

Although analyzing who uses Facebook and when during the campaign is not the goal of this paper, it is an important starting point in order to put our analysis and results in context. Table 1 presents detailed descriptive statistics. There are marked differences across parties in how many candidates have a public profile on Facebook, from over 40 per cent in opposition parties Socialist Peoples' Party, Social Liberal Party, and Liberal Alliance to below 20 per cent in the Danish People's Party and Unity List. These differences between the campaign styles of these parties is in line with the results of a survey among candidates participating in these elections (Skovsgaard and Van Dalen, 2013) Although few in numbers, Unity List members are the most active, generating approximately 32 posts per candidate during the campaign. The candidates from the Danish People's Party were by far the least active, with only approximately 7 posts per candidate. One important implication for our analyses is that, for some parties, we have a low number of activity, represented by few and short texts. This limits the possibilities for inferences regarding some of the subgroups – like rerunners for the Danish People's Party. We detail at each stage how we addressed these limitations in the analyses.

--- Figure 1 around here ---

As depicted in Figure 1, from a time perspective, Facebook activity goes up just around the televised debates (August 28 and September 13) and – as in general social media use – there is less Facebook activity during weekends (August 27-28, September 3-4, and September 10-11). Figure 2 summarizes the distribution of Facebook activity at the individual candidate level, indicating that there are four candidates with very strong activity on Facebook (two of them party leaders), but the majority of the other posters have around 20 posts in the full campaign (number of posts/candidate: mean = 29.43, median = 23).

--- Figures 2 and 3 around here ---

The final information important for contextualizing our findings is linked to the weight one candidate carries in terms of Facebook communication, i.e. what share of posts/day is due to a single candidate. While in terms of overall campaign communication, one candidate contributes only around 4% of the daily posts (see Appendix 1), as displayed by Figure 3; there are yet again differences between parties. These are not surprising, given the differences in both the number of candidates on Facebook and their activity. Accordingly, for the Christian Democrats (K) and the Danish People's party (O) whatever communication we measure is overwhelming driven by couple of people, resulting in a high share of one candidate in the daily communication.

Operationalization and methods

Our Facebook data on candidate communication is simple text data. To investigate the Facebook agenda, we created a dictionary that included 12 issue categories: crime, defense, economy, education, employment, environment, EU, family, health care, immigration, social and tax. We built this dictionary so that it covers all issues for which the representative rolling cross-section campaign survey by TNS Gallup included salience questions (Hansen et al., 2012b). Thus, we used words that we associated with, for example, crime or the economy which are two of our categories. The dictionary was developed and tested on a set of opening speeches given to the Danish Parliament by the prime ministers in the period from 1945 to 2008. Hence, it includes a wide set of political terms that have proven efficient in distinguishing between the same 12 categories which are used in this work.[4] Depending on the question of interest (as discussed in the analysis section), we calculate a similarity index between the text from the statuses and each category of our dictionary.

First, the amount of issue discussion is evaluated by how similar the text gathered from these profiles is to our dictionaries. For all the 12 issues in question, we used the Jaccard dissimilarity index that is calculated as a ratio between the intersection of two sets and their union. In our case, the two sets were text from the Facebook profiles and the dictionary for each issue. The index is scaled [0, 1], and we reversed it so that higher values reflect higher attention given by candidates on their Facebook profile to that particular issue.[5] We analyzed the eleven biggest national newspapers to calculate the attention for each of the 12 issues on the media agenda (Hansen and Bordacconi, 2013). The 11 major Danish newspapers were analyzed on a daily basis throughout the campaign. The analysis was a quantitative "dictionary" approach to text analysis carried out in the database Infomedia.dk that includes full text of all Danish newspapers. A "dictionary" for each issue was developed and tested before the analyses were done. Only articles referring to the election, parties, or candidates were included in the analysis (see Hansen and Bordacconi, 2013).

Second, the operationalization of "internal coherence" of the Facebook agenda is assessed for each party separately. Here, we first calculate the similarity indices using the same dictionaries but for the party manifestos. Accordingly, based on the text of the party manifestos we will have the issue salience or attention – expressed in terms of similarity – for each party. We use this distribution of issue attention as a benchmark for the comparison. We compare the daily issue salience distribution on Facebook (for each party) with the manifesto salience distribution of the 12 issues using a reversed Duncan and Duncan (1955) measure of dissimilarity. Subsequently, we also analyze the overlap of salience distribution between the manifesto and each individual candidate's total Facebook communication throughout the campaign. In its original form, the index captures the proportion (or percentage) of a particular distribution that needs to be changed in order to perfectly resemble another distribution of the same quantity in a different group. The reversed form we use ranges from

0 to 1, where 0 reflects no overlap (or coherence) between the salience distributions and 1 is a

perfect overlap. For example, a score of 0.25 indicates that 75% of the issue salience

distribution (of a particular campaign day) would need to be changed (or re-ordered in our

case) to be perfectly in line with the salience distribution set out in the party's manifesto.

Third, we analyze the dynamics of communication on Facebook in relation to how

issue salience evolves at the public opinion level and how the media represents it. First, we

will scale the salience quantities to make them comparable and to reflect the salience of each

issue in relative terms throughout the campaign, namely how does the salience of a particular

issue relate to the average salience it had throughout the whole campaign. Keeping in mind

that issue references on Facebook constitute a very small segment of the total

communication, we discuss these in relative terms: the salience of a given issue on a given

platform (for example Facebook) on one day is expressed in terms of deviation from average

salience of that issue throughout the whole campaign, resulting in comparable values across

issues that can be negative (below average salience for the issues) or positive (above average

salience for the issues). For our multivariate analysis we are interested in checking the

interaction between the three platforms for which we have issue salience data: public opinion

(voter rolling-cross section study), news media, and Facebook. On each platform, each issue

has 21 data points, and, thus, we have a relatively short time series for which we want to

assess whether the salience (or evolution of salience) on other platforms has a significant

impact. More precisely, our analysis answers the following question: does the evolution of

the salience of a particular issue throughout the campaign depend on the importance of the

very same issue on other platforms?

Next, we assess whether changes in the coherence of issue communication

benchmarked to the party manifestos are associated with changes in the polling results for

each party. Four nationally representative polls were carried out throughout the campaign –

Voxmeter, Gallup, Epinion, and Megafon – from 26 August to 14 September 2011.[6] For each

day, we take the average standing of a party across these four reported polls and we cross-

reference it with the internal coherence scores of the Facebook issue communication to test

whether the campaign agendas become less coherent when parties drop in the polls.

When comparing the agendas, we employ simple bivariate Granger models, after

visual inspection. With these many observations, overfitting becomes a real issue as we

increase the number or lags or we want to specify a model including all four platforms

simultaneously.[7] In general terms, the Granger model tests whether using a time series x helps

to better explain the time series y compared to a model that only accounts for the lags of y. In

our analysis we use the first lags of y for several reasons. First, because the public and media

agenda are measured on a daily basis. Second because the Danish campaign is short and has a

fixed term. Given this short time span, we expect politicians to react fast to developments in

the campaign. This also limits our number of data points. Finally, we use on lag because

Facebook is a flexible and responsive medium. Therefore, we expect a short time lag.

Previous research has shown that lag length is generally shorter online than off-line (Sweetser

et al., 2008, p. 210). Nevertheless, we report 2 and 3-day lag results as well. The Granger test

results are F-test values with associated two-tailed significance levels. For each issue we test

for the potential influence of the news and public opinion agenda (expressed as relative

salience) on the relative Facebook issue salience.

Results

All talk, no issues?

The discussion about the 12 pre-selected issues is a minor part of the Facebook

communication by candidates for the Danish parliament. Figure 4 displays the similarity

between the Facebook campaign communication and our dictionary comprising all terms

relevant for the 12 issues. Overall, issue discussions (y-axes on all figures) do not represent a

large part of Facebook communication. Issue references are present, but these are not the

most central topics mentioned by the candidates on their Facebook profile. More new

candidates use Facebook and due to this difference their Facebook communication covers

issues more frequently on the aggregate level, at least in the first part of the campaign, after

which the re-runners catch up. Overall, issue discussions become less frequent by the end of

the campaign for new candidates, and this is also associated with less communication in the

campaign (as can be seen from the lower number of posts in that period).

--- Figure 4 around here ---

However, these differences at the aggregate level are driven by the fact that, on average, we

have more new candidates posting on each day of the campaign. Panel B displays the total

issue discussion for each day divided by the number of posters (individual candidates). In this

case, issue discussion for an average re-runner candidate is higher throughout the whole

campaign (an increasing during the campaign) compared to a new candidate, and, again, the

overall issue discussion declines at the final stages of the campaign.

To further analyze these differences, we have calculated the issue discussion for

each candidate separately. Our Facebook text input is not rich enough to calculate daily

values for each candidate. However, we can take *all* the Facebook communication of one

particular candidate and use that text as comparison for our dictionaries. Panels C and D

display the mean differences (with 95% confidence intervals) between re-runners and new

candidates, based on these individual-level quantities. In line with our daily average

breakdown, Panel C shows that, on average, new candidates focus less on issues than those

re-running for office. An average re-runner posts more (mean difference 16.25, $p < 0.001$),

mentions more issues (from the 12 issues included, mean difference 1.74, $p < 0.001$),

resulting – on average – in more issue discussion for a re-runner candidate on the individual

level. Once we limit our sample of candidates to those who have posted at least 21 times we

find a similar pattern, but the differences are not statistically significant anymore (Panel D).[8]

An individualized campaign?

Figure 5 displays the dictionary-based salience of each issue in the party manifestos for the

2011 parliamentary elections. This issue salience distribution serves as the ideal campaign

agenda, which is the point of comparison for the analysis of internal coherence of the

Facebook issue discussion. While in absolute numbers the issue salience is low using our

operationalization, the most important input here is related to how these issues rank within

each party in terms of attention dedicated to them. On average, we can see the EU, economy,

employment, and health care related issues were most salient in these manifestos, but there is

some between-party heterogeneity. The Social Democrats, Socialist People's Party and Unity

List did emphasize the environment more in relative terms than other parties, whereas the

defense and immigration issues were more salient for the Danish People's Party, compared to

other parties.

--- Figure 5 around here ---

Table 2 shows the *internal coherence* of the Facebook campaign, measured as the

overlap between the Facebook agenda and the ideal agenda. As discussed above, the reversed

form of the Duncan and Duncan (1955) index serves as a quantitative measure of coherence:

the larger the overlap between the Facebook and the ideal agenda, the higher the internal

coherence of the campaign. The internal coherence scores are between .73 and .90, showing

considerable overlap. In terms of magnitude, a score of, for example, 0.7 indicates that we need to change 30% of the distribution to get a full overlap (or coherence). The coherence scores are high in comparison to the internal coherence of ads or television debates in previous Danish campaigns (Elmelund-Præstekær, 2011). However, these are coherence scores calculated based on the relative salience of issues, and they do not speak to how and how much these issues were discussed in absolute terms, so direct comparisons might be misleading. The internal cohesion is lowest for two parties that had the lowest general activity on Facebook (and implicitly also less issue communication): the Christian Democrats and the Danish People's Party. However, these scores are not much lower than the scores for the other parties.

--- Table 2 around here ---

To see whether the coherence of the Facebook campaign is higher for re-runners than for new candidates, we analyze differences between the two on the party level and the individual level. First, we compare the internal coherence of the agenda of re-runners and newcomers per party. The last two columns of Table 2 present the same reversed Duncan and Duncan (1955) index for new candidates and those who are re-running for office. As above, we have taken all communication by members of one party and benchmarked the issue salience distribution to the one found in the manifestos, but in this case we have done this separately for the two types of candidates. Overall, the differences are minor and substantively limited, but in most cases re-runners appear to be slightly more in line with the issue agenda (in terms of relative salience) set out in the party manifestos. Unity List is the only party where those re-running for office are more coherent with their party manifestos than new candidates. This could rightfully be the reflection of the high activity on Facebook by the party leaders.[9]. In

the case of the Liberal Alliance and the Liberal Party, we find that the agenda of new

candidates is slightly more consistent in the issue salience distribution than the agenda of

those re-running for office, whereas for other parties we find no major differences.

Next, we compare the coherence of the campaign of new candidates and re-runners at

the individual level. Therefore, we study how the Facebook communication of **each**

candidate on its own matches up with the party's issue agenda expressed as relative salience

of the issues measured. We proceed by taking all the Facebook communication of one

candidate throughout the entire campaign, calculate first the issue salience distribution and

then calculate the coherence score.[10] Panels A and B in Figure 6 display the mean differences

for re-runners versus new candidates and the distribution of coherence scores for these two

groups.

--- Figure 6 around here ---

The Facebook communication of re-runners appears to be significantly more coherent with

the ideal agenda expressed in the manifestos. However, these coherence scores might be a

simple by-product of insufficient communication on Facebook, which would lead to many 0

issue salience scores. Therefore, we restrain our analysis to those candidates who posted at

least 21 times throughout the campaign (panels C and D in Figure 6). For these candidates,

the differences are not statistically significant. This shows that those new candidates who

actually use Facebook and at least somewhat touch upon policy related questions are

similarly in line[11] with what their party set out in the manifestos.[12]

In sum, when politicians talk about issues, the distribution of the attention is similar to

the ideal agenda expressed in the party's manifesto. The Facebook agenda of active

candidates is more coherent with the ideal agenda. Based on the daily and individual-level

analysis, we find evidence suggesting that re-runners stay more on message than new
candidates. But differences between re-runners and new candidates on the individual level are
only present because re-running candidates post more about issues. It is important to note
again that there are parties (like the Danish People's Party and Christian Democrats) where
the publicly scrapeable Facebook activity is very low, hence both coherence but also
differences between re-runners and new candidates are definitely not representative of a
general party/MP Facebook behavior in these parties.

Responsiveness of the Facebook campaign

We start our analysis in this last section by looking at the relative salience of each issue
(compared to one issue's average salience throughout the whole campaign) on the Facebook,
media and public agenda, displaying the results in Figure 7. Perhaps the most notable aspect
here regarding the Facebook communication is that most issues are most salient in the middle
period of the campaign, which also comes at the height of Facebook activity. Crime and
immigration are already salient at the kick-off of the campaign, but their salience decreases
almost in a linear fashion throughout the campaign. The environment and the economy
present less variation, holding steady around average salience with a slight decrease in the
end of the campaign, again, where Facebook communication reaches the lowest levels.

--- Figure 7 and Table 3 around here ---

Table 3 reports *p-values* for the Granger tests for the media to Facebook and public opinion
to Facebook paths. As previous research indicated high reaction speeds and fast
communication on Facebook, and as we have serious data constraints regarding the short
length of the series (a short official campaign), we focus on a 1-day lag, though we also

report results for 2 and 3-day lags (and not longer, as our series is very short). Using the

present operationalization to detect issue salience, we essentially find no evidence of cross-

platform influence in the 2011 Danish parliamentary election campaign. The exception is the

EU issue, but only with the shortest lag. This issue was also among the most discussed issues

on Facebook throughout the campaign. These results suggest that including information about

issue salience at the public opinion or media level does not help to predict the salience of

issues on the candidates' Facebook agenda.

Additionally, as a further check, we have carried out the same analyses but

differentiating between parties (without the two parties that did not communicate too much

on Facebook, see Appendix 3). Overall, the patterns of no-relationship mimic the aggregate

results, with some deviations. Social Democrats reacted to the news for the family issue, to

the public for the crime issue, and the Liberal Alliance reacting to the public on the social

issue. However, and this is crucial, for all other parties or issues, we did not find any

systematic patterns that would not be sensitive to the lag length which suggests that weak or

no linkages are the overall patterns. Yet again, we need to emphasize that these are relative

salience measures based on small amount of issue communication on Facebook, in a short

campaign.

The last step of our analysis focuses on the influence of change in polling numbers of

a party and the internal coherence of the Facebook issue salience distribution throughout the

campaign (see Appendix 4). We followed a similar approach and employed the Granger-tests

for the daily internal coherence score on Facebook by all candidates of a given party and that

particular party's standing in the polls. First off, we see relatively high stability in terms of

coherence throughout the campaign, with a decreasing trend only for the Unity List and the

Conservatives. Most changes in terms of standings in the polls are within 2 percent

throughout the campaign. With the exception of the Socialist People's Party (that has a slight

decreasing trend in the polls and very minor increase in coherence), for none of the parties does information about polling numbers significantly help explain throughout-campaign variation in the coherence scores (See Table 4). Thus, despite the flexibility offered by Facebook, the Facebook agenda of the subset of candidates having public pages reacts to neither the media nor public agenda, nor to opinion polls. We summarize our findings and implications for the broader study of issue communication on Facebook in the next, concluding section.

--- Table 4 around here ---

Discussion and conclusions

We analyzed the content of Facebook updates by political candidates during the 2011 Danish parliamentary election to find out whether the control over the channel, its semi-public character, and its flexibility influence the campaign agenda on this social media. Previous studies have shown that politicians use social media more as a medium for broadcasting than for dialogue. Despite the importance of issues in Danish elections, we found that issue discussion on Facebook is generally low. This suggests that, similar to other campaign contexts (Gainous and Wagner, 2014; Jackson and Lilleker, 2011), building a policy profile is not as important a goal of social media use by Danish politicians as, for example, mobilization, relationship management, or giving insight into the politicians' private life. Although issue discussion was limited, politicians do not ignore issues all together. One reason for "preaching to the choir" and explaining issues positions once more to their followers might be that these followers can serve as opinion leaders. If candidates clarify their policy preferences to their supporters on Facebook, these supporters will be better able

to present a clear profile of their candidates when canvassing or when trying to convince others to vote for their preferred candidates.

When politicians talk about issues on Facebook, there is a strong overlap with the ideal campaign agenda expressed in the manifestos. The internal coherence of the Facebook campaign was high compared to the coherence of other channels like ads or even television debates found in previous studies. Facebook was thus not used as a platform to build an individual policy profile. New candidates were not more likely to personalize their issue agenda than rerunning candidates. These results might indicate that candidates differentiate themselves from other politicians within their party based on their personality rather than their policy profile, and this aspect presents itself as a possible avenue for future research.

Despite the flexibility of Facebook, we did not find that social media campaigns responded to changes in the media or public agenda, nor to standing in the polls. On the one hand, this might be due to the particularities of the 2011 Danish elections. The Danish election campaign is relatively short, and in this particular campaign there was no real change in parties' standing in the polls (see Appendix 4). Similarly, change in the public and media agenda was limited, which was partly due to the status of the economy overshadowing other issues. On the other hand, it might simply show that politicians hardly take the opportunity to conduct an individualized and responsive campaign on Facebook. This may partly be due to the Danish context, where campaigning is less centralized and professional than, for example, in the United States or the United Kingdom (Gibson and Ward, 2012). Surveys have shown that a significant part of the Danish politicians indicate that they do not use Facebook for strategic reasons, but only to 'appear modern' (Skovsgaard and Van Dalen, 2013). Politicians might need more time to adapt to the new medium and appreciate the possibilities of control, personalization, and responsiveness offered by Facebook. It might be the case that it takes

time for politicians and campaign management to become more experienced with Facebook and the real impact of social media on the campaign to become visible.

Our analysis builds upon a unique combination of data, including Facebook status updates, public opinion data, media data and party manifestos. Nevertheless, as in most cases, our analyses also faced with limitations related to the type and characteristics of the data used. We only relied on public Facebook profiles. This limited the number of candidates included in the analysis, although the distribution of candidates using Facebook across parties is in line with other studies. Facebook adoption was skewed across parties, and Facebook posts by individual candidates for each day were limited in number. Facebook status updates are also very short text updates or snippets, sufficient to express an idea considered important by the candidate. Hence, we had to aggregate (or put together) batches of texts to analyze our research questions: all the posts from a candidate throughout the whole campaign, or all the posts by some candidates on a day, and so on. In order to avoid masked patterns due to these aggregation strategies, we presented in parallel results from these different aggregation strategies. However, the limited text input also resulted in many cases where the issue attention scores were zero, creating salience distributions with more zeros and thus the overlap scores have to be interpreted with extra care. Finally, there is not too much variation in terms of issue salience throughout the campaign in the news media or the voter perception. This making it difficult to find substantive differences between these platforms. This feature of the campaign comes as a limitation, also because the initial party manifesto issue attention distributions were very much in line with the issue attention distribution in the media or voter study. Nevertheless, our results shed light on important nuances of political communication on Facebook, and will hopefully inspire more research studying the dynamics of the Facebook campaign in combination with party manifestos, media agendas and public opinion data.

Endnotes

[1] In this paper, sitting MP's who re-run for office are referred to as 're-runners', and challenging candidates who are not in parliament are referred to as 'new candidates'. We avoid using the term 'incumbents', since in the Danish electoral context this may also refer to candidates who belong to the governing party.

[2] Information on personal pages (even with the most relaxed privacy settings) is not accessible unless one has a friendship status on Facebook. Although there are personal pages for which the Facebook wall is visible even without friendship, the activity on these walls cannot be gathered and used for analysis.

[3] There are six types of status categories: status, photo, link, video, swf (flash), and music. While they reflect different type of status updates, all have some associated text (like the poster's words on the link, photos). We use all these text data as well. The distribution on the different types of updates is: 1872 link, 5 music, 1143 photos, 2805 simple status, 13 swf, and 545 videos (plus 5 uncategorized types).

[4] For a description of the techniques used to develop the dictionary see Hobolt and Klemmensen (2008).

[5] More precisely, this index calculates the ratio between the words that are found in both the dictionary and the texts and the total number of words in both the texts and the dictionaries. Its main advantage is that it makes the index highly comparable across texts and dictionaries with different lengths. However, it is also a calculation method that biases the identified issue content downwards, as the intersection between two sets does not take into consideration if a word from a dictionary appeared once or ten times in a document. Alternative operationalizations are of course possible (like taking into account how many times a

dictionary word appears in a text, or how many of the total words in a text are also found in the dictionary), but these are more sensitive to differences in text length. Furthermore, these operationalizations indeed influence the absolute value of the "issue talk", but they yield the same results in the subsequent comparative analysis.

[6] On 27 August and on 10 September no Megafon poll was carried out. For these days, the calculation of average scores is only based on the three other available national polls.

[7] This possibility would be available in a vector autoregressive model (VAR) specification. Although VAR models are employed in similar analyses of online communication data (Bode et al., 2011) or in the analysis of communication reciprocity by different actors (Adams et al., 2005), they are also very costly in terms of the number of parameters to be estimated. For these exact reasons of possible overfitting with a sample size of 21, we decide to specify the simpler Granger models.

[8] We chose the 21-post cut-point because the official campaign ran for 21 days.

[9] The fact that party leader communication is a large proportion of the re-runner communication and we see such coherence patterns confers face validity to our measurement, as party leaders are crucial in deciding the election message and plan

[10] It is impossible to analyze both campaign stage and individual related differences, as we cannot subset our text data to meaningfully capture a daily individual Facebook activity. Simply put, we do not have enough candidate Facebook communication gathered for a daily basis.

[11] To reiterate, they might not voice the same opinions on these issues. What we analyze here is the rank of attention given to an issue, or relative salience in other words.

[12] Besides the amount of posts, the number of issues each candidate actually mentions (from the 12 coded issues) has an even more important role in this analysis. Many not-mentioned issues from one candidate suppress the coherence score. Only 21 candidates actually mention

all twelve issues to some extent (13 new candidates and 8 re-runners), and for these candidates, the coherence scores are between 0.69 and 0.90. We carried out an additional analysis controlling for the number of issues mentioned, and for those cases there are no significant differences between re-runners and new candidates.

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Tables

Table 1: Party level descriptive statistics for Facebook usage of public Facebook profiles during the 2011 Danish election campaign

Party		% of candidates on Facebook	% of re-runners on Facebook	% of new-candidates on Facebook	Total posts	Posts by re-runners	Posts by challengers
Social Democrats	A	32.26 (30/93)	28 (10/36)	35 (20/57)	817	307	510
Social-Liberal Party	B	46.67 (35/75)	100 (4/4)	44 (31/71)	1120	99	1021
Conservative People's Party	C	36.05 (31/86)	33 (5/15)	37 (26/71)	707	102	605
Socialist People's Party	F	53.26 (49/92)	86 (18/21)	44 (31/71)	1384	633	751
Liberal Alliance	I	44.59 (33/74)	100 (3/3)	42 (30/71)	668	63	605
Christian Democrats	K	12.64 (11/87)	0 (0/1)	13 (11/86)	193	0	193
Danish People's Party	O	15.22 (14/92)	0 (0/22)	20 (14/70)	96	0	96
Unity List	Ø	16.3 (15/92)	100 (3/3)	13 (12/89)	492	181	311
Liberal Party	V	34.41 (32/93)	39 (16/41)	31 (16/52)	911	558	353

Note: Danish party abbreviations in the second column.

Table 2: Internal coherence of the Facebook agenda during the 2011 Danish election campaign

	Internal Coherence (0-1)		
Party	All	New candidates	Re-running for office
A	0.90	0.93	0.87
B	0.87	0.87	0.82
C	0.87	0.87	0.78
F	0.89	0.89	0.90
I	0.87	0.86	0.80
K	0.73	0.73	NA
O	0.78	0.78	NA
V	0.85	0.86	0.84
Ø	0.88	0.86	0.89

Note: Total Facebook posts throughout the campaign for each party benchmarked to issue salience distribution in manifestos (higher values indicate stronger correspondence between manifesto and Facebook communication). Last two columns display the same statistic calculated only based on posts from "new candidates" or those "re-running for office". NA marks that no coherence score can be calculated, as there were no re-runners on Facebook.

Table 3: Interaction between platforms

Issue	Media > Facebook	Public > Facebook	Media > Facebook	Public > Facebook	Media > Facebook	Public > Facebook
Lag	(1)		(2)		(3)	
crime	0.757	0.084	0.355	0.366	0.216	0.751
defense	0.707	0.343	0.981	0.099	0.905	0.363
economy	0.359	0.885	0.516	0.656	0.408	0.792
education	0.367	0.645	0.395	0.182	0.713	0.384
employment	0.866	0.659	0.236	0.898	0.304	0.7
environment	0.164	0.46	0.414	0.704	0.957	0.901
EU	**0.017**	**0.031**	0.063	0.103	0.064	0.234
family	0.081	**0.036**	0.181	0.168	0.421	0.141
healthcare	0.59	0.168	0.797	0.179	0.877	0.19
immigration	0.664	0.232	0.058	0.609	0.022	0.91
social	0.455	0.472	0.703	0.683	0.957	0.618
tax	0.676	0.332	0.919	0.106	0.315	0.32

Note: Columns contain p-values (two-tailed test) for the relative salience on media or public opinion to relative salience on Facebook path.

Table 4: Interaction between standings in polls and daily coherence (benchmarked to manifesto salience distribution

Party	Polls > Coherence	Coherence > Polls	Polls > Coherence	Coherence > Polls	Polls > Coherence	Coherence > Polls
Lag	(1)		(2)		(3)	
A	0.957	0.609	0.992	0.396	0.94	0.53
B	0.996	0.504	0.054	0.077	0.169	0.089
C	0.313	0.791	0.24	0.85	0.362	0.549
F	**0.039**	0.66	**0.022**	0.282	**0.027**	**0.044**
I	0.487	0.369	0.36	0.041	0.629	0.006
Ø	0.072	0.48	0.504	0.811	0.304	0.875
V	0.26	0.873	0.588	0.364	0.362	0.774

Note: Columns contain p-values (two-tailed test) for standing in polls and coherence in terms of issue salience on Facebook.

Figures

Figure 1: Number of posts and unique posters (candidates) during the 2011 Danish election campaign

Candidate activity on Facebook
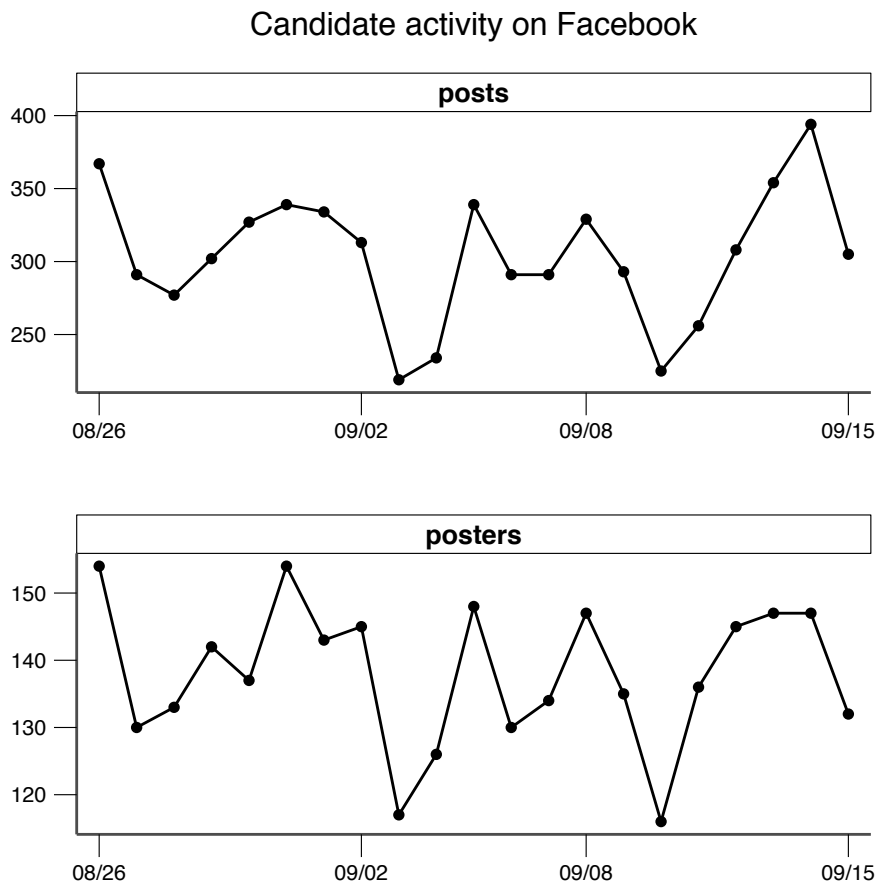
Figure 2: Distribution of number of posts during the 2011 Danish election campaign

Number of Facebook posts by candidates
in the 2011 national election campaign, Denmark
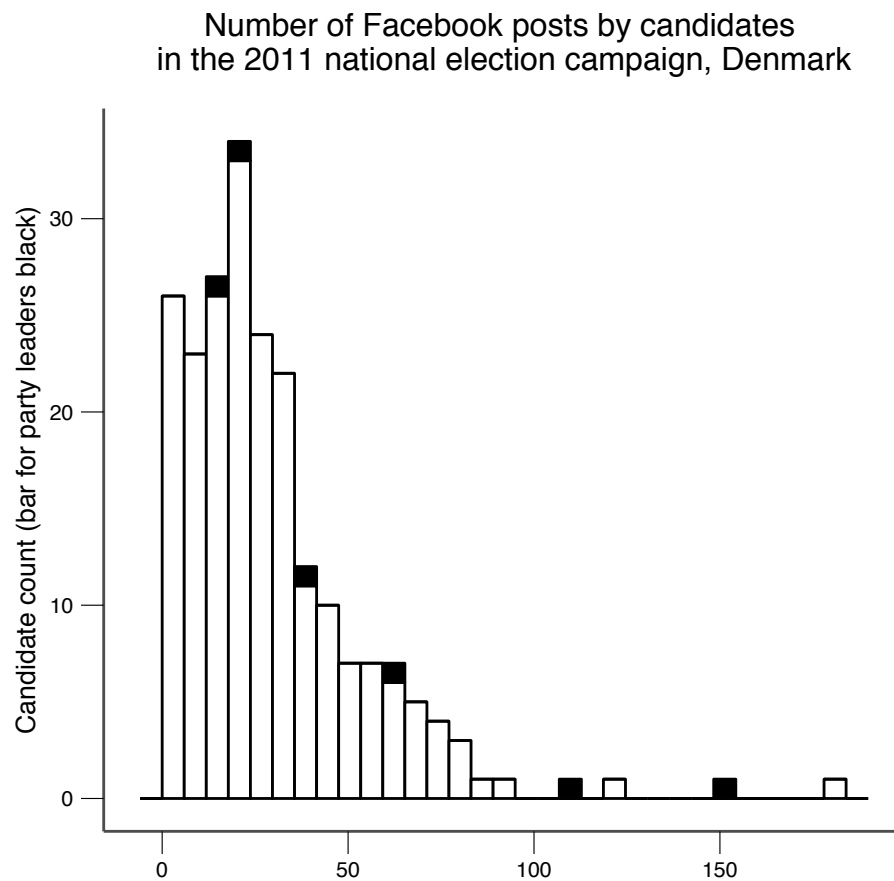
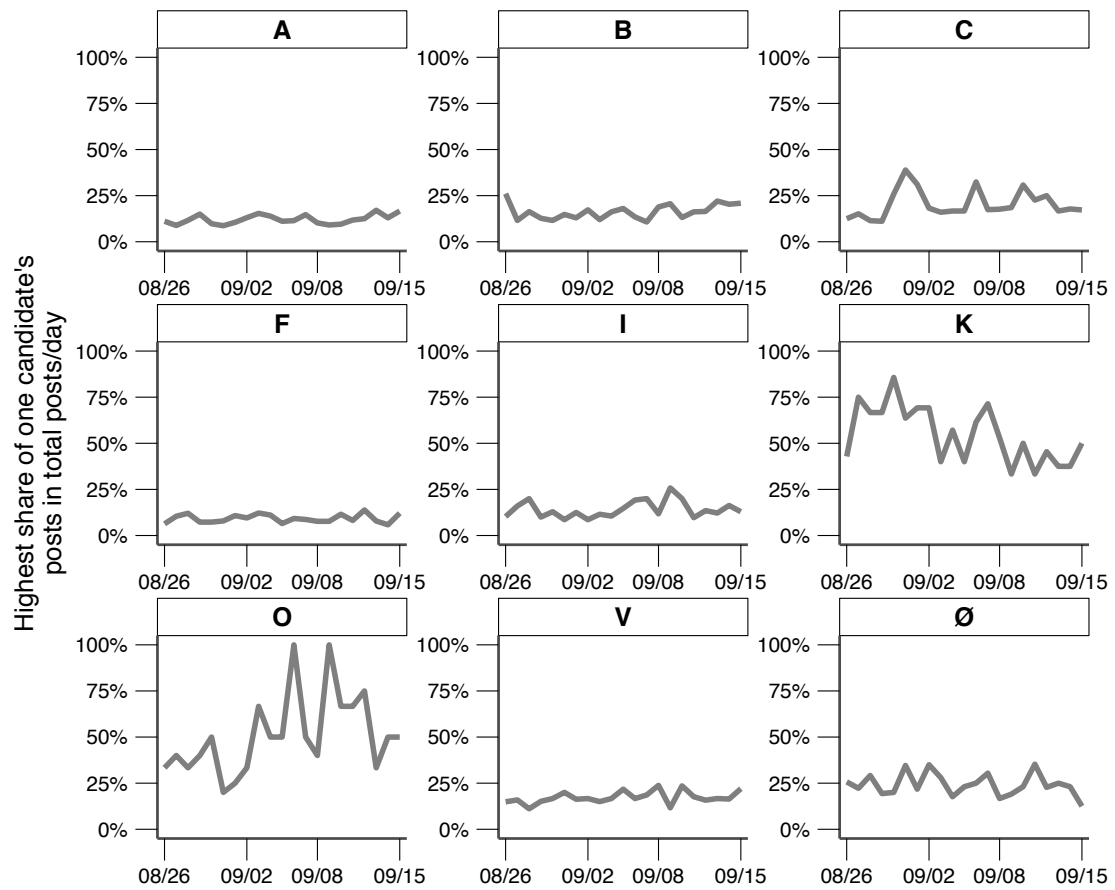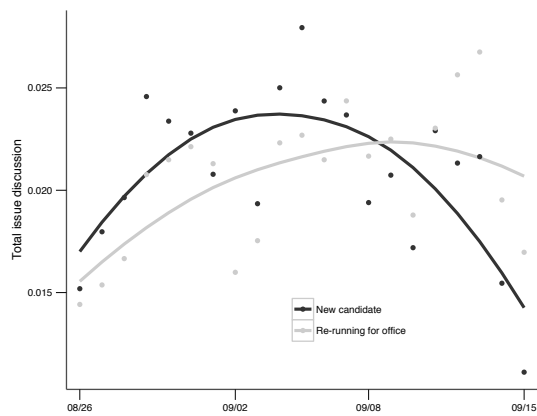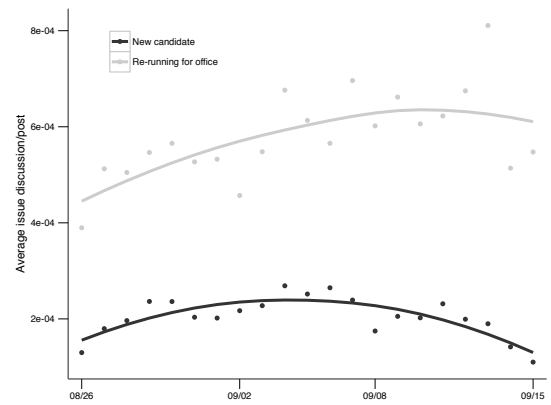**Figure 3: Highest share of one candidate in total daily Facebook activity during the 2011 Danish election campaign**
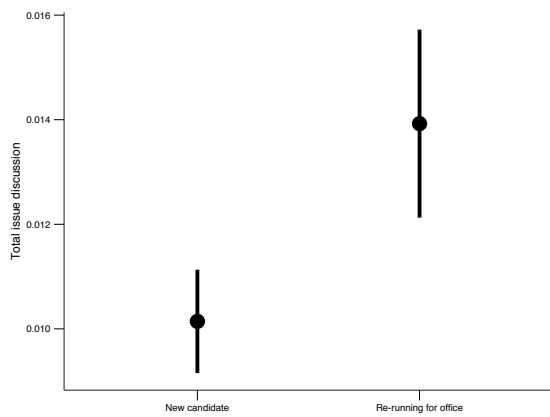
Figure 4: Difference in daily issue talk between those re-running for office and new candidates during the 2011 Danish election campaign
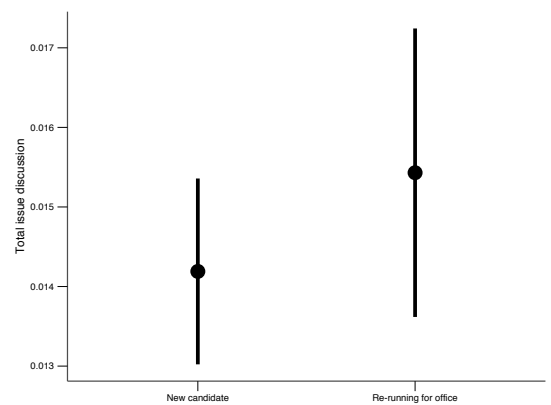

Panel A: Total issue discussion for the campaign, all text from re-runners/day and new candidates/day.

Panel B: Issue discussion re-runners per day divided by number of re-runners and discussions by new candidates per day divided by number of new candidates.

Panel C: Average issue discussion calculated for the full campaign, individual-level Facebook post data.

Panel D: Average issue discussion calculated for the full campaign, individual-level Facebook post data for those candidates who posted more than 21 times during the campaign.

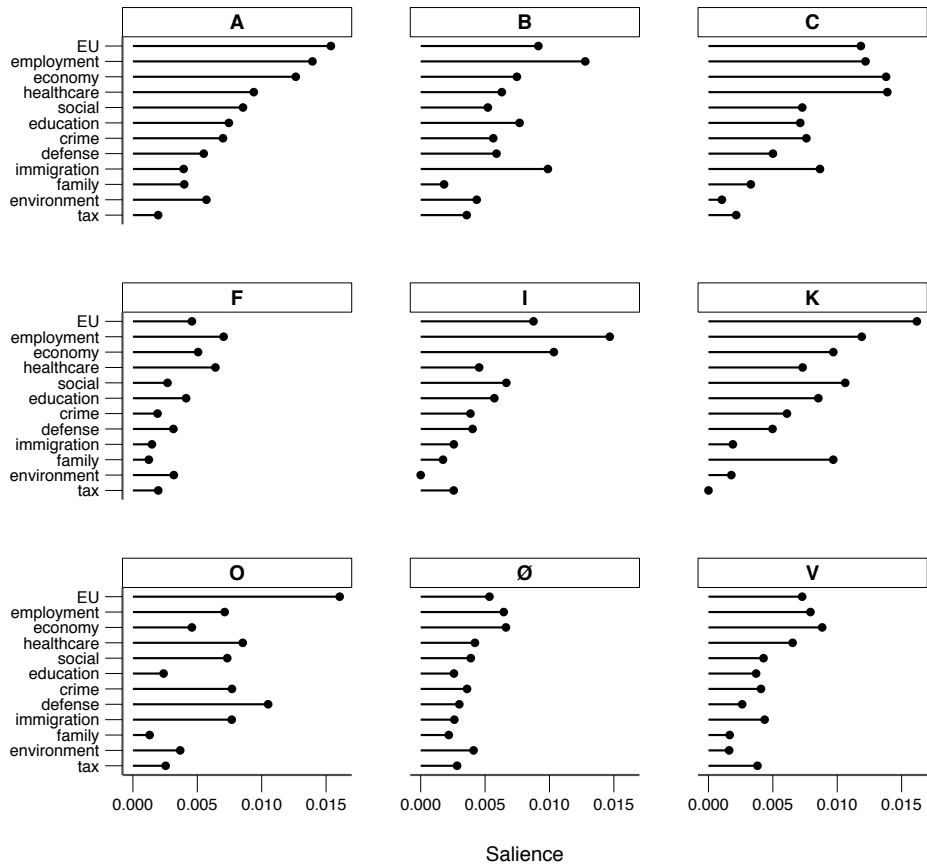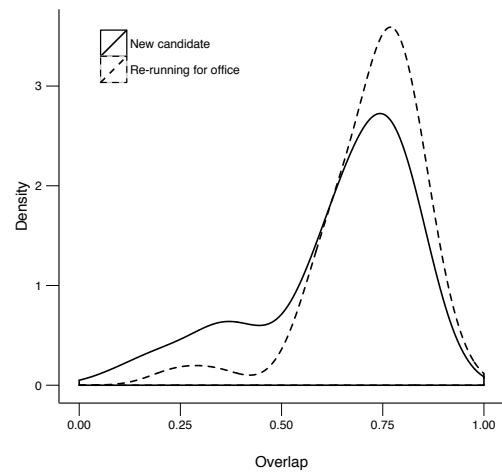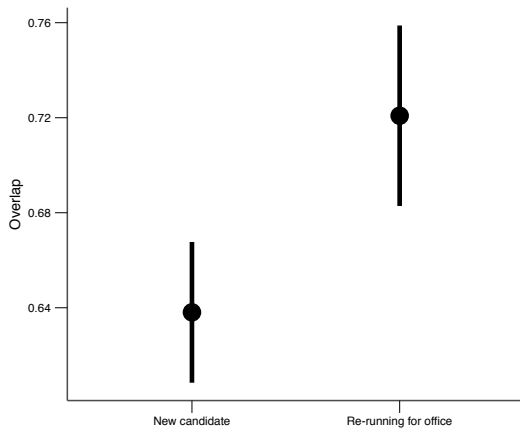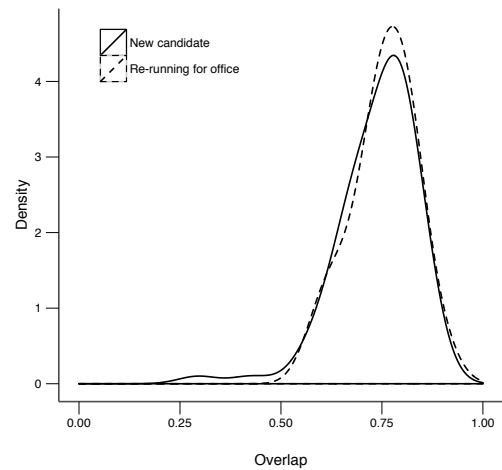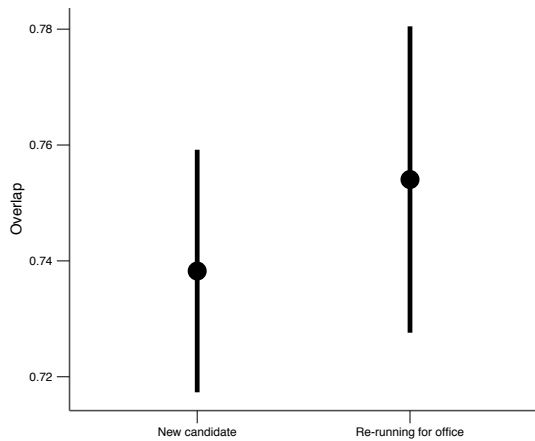**Figure 5: Issue salience in party manifestos**

Figure 6: Difference in coherence between those re-running for office and new candidates during the 2011 Danish election campaign

Panel A: Average coherence based on individual Facebook communication.

Panel B: Coherence distribution based on individual Facebook communication.
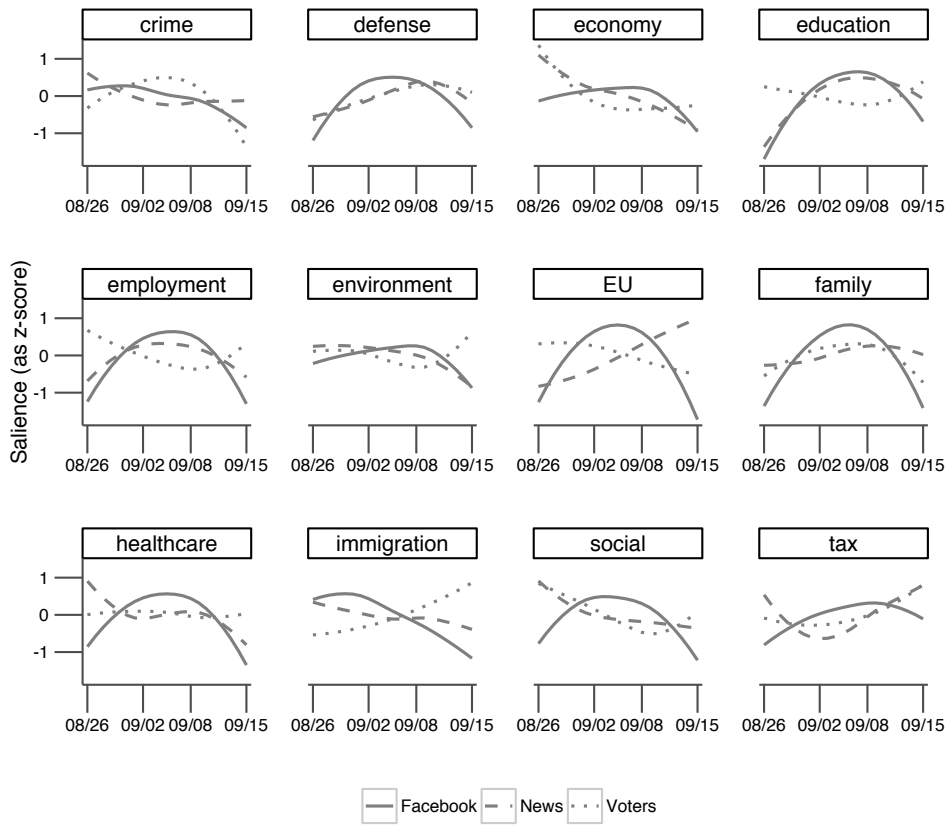

Panel C: Average coherence based on individual Facebook communication for candidates who had 21 or more posts during the campaign.

Panel D: Coherence distribution based on individual Facebook communication for candidates who had 21 or more posts during the campaign.

Figure 7: Relative salience throughout the campaign for three platforms

Supplementary information

Appendix 1: Distribution of number of posts during the 2011 Danish election campaign, each party separately

Number of Facebook posts by candidates
in the 2011 national election campaign, Denmark
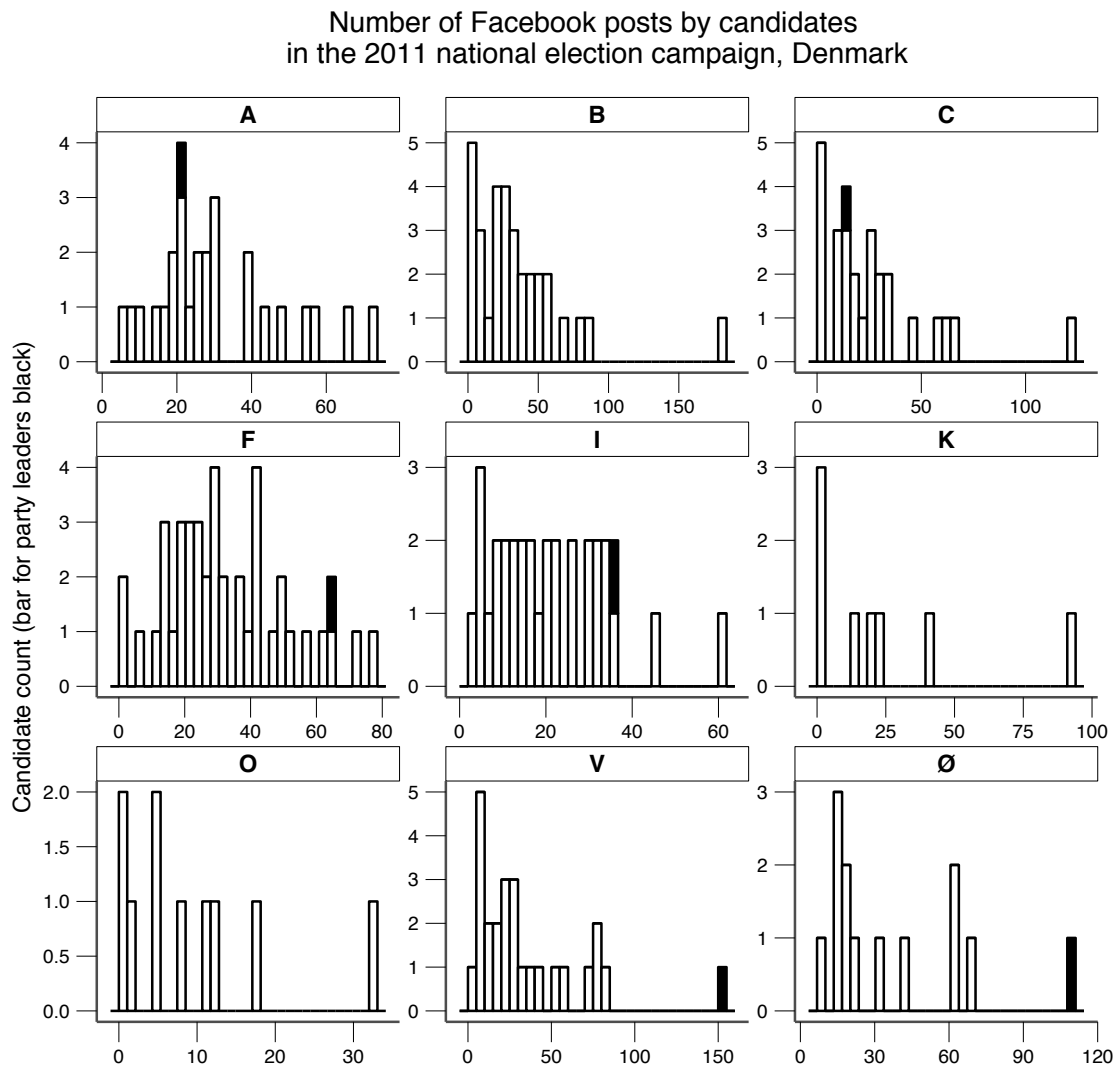
Appendix 2: Highest share of one candidate in total daily Facebook activity during the 2011 Danish election campaign

Appendix 3: Interaction between platforms, separately for parties

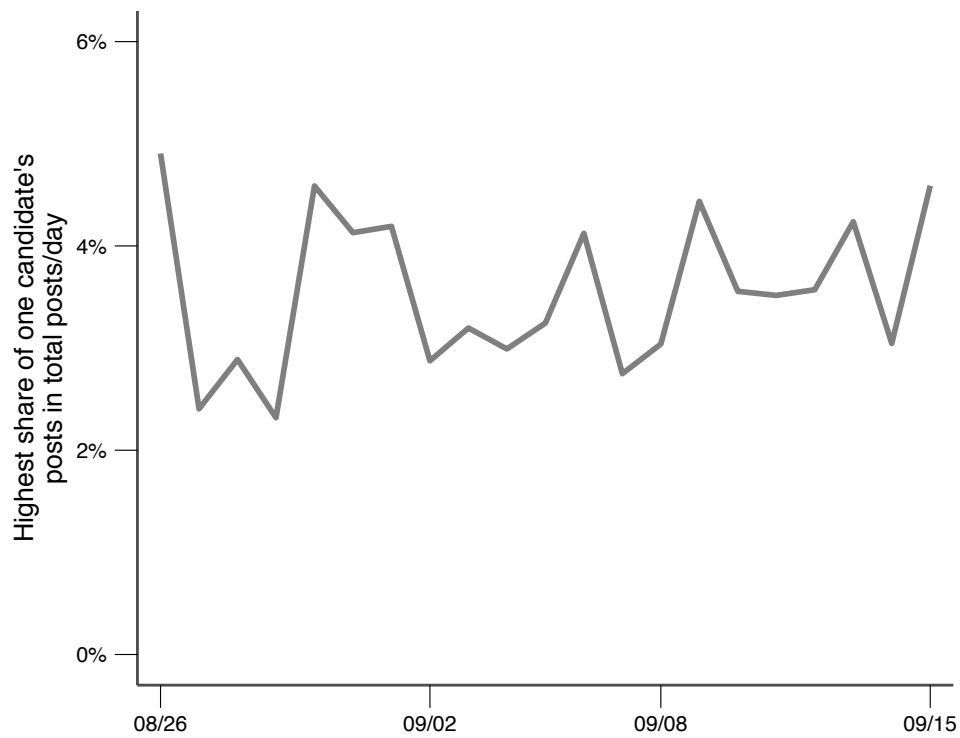|	Issue	Media > FB	Public > FB	Media > FB	Public > FB	Media > FB	Public > FB
	Lag	(1)		(2)		(3)	
F	crime	0.83	0.081	0.786	0.273	0.586	0.539
	defense	0.491	0.667	0.643	0.612	0.855	0.8
	economy	0.491	0.987	0.838	0.787	0.495	0.731
	education	0.052	0.165	0.142	0.129	0.421	0.253
	employment	0.899	0.383	0.947	0.498	0.996	0.338
	environment	0.355	0.832	0.585	0.965	0.609	0.513
	EU	0.282	0.984	0.066	0.999	0.117	0.998
	family	0.443	0.676	0.499	0.985	0.613	0.997
	healthcare	0.665	0.043	0.55	0.085	0.735	0.173
	immigration	0.813	0.647	0.949	0.06	0.769	0.037
	social	0.092	0.324	0.01	0.79	0.054	0.768
	tax	0.693	0.248	0.726	0.279	0.676	0.587
B	crime	0.504	0.497	0.027	0.32	0.13	0.656
	defense	0.529	0.809	0.161	0.887	0.279	0.289
	economy	0.367	0.267	0.19	0.268	0.347	0.395
	education	0.408	0.306	0.485	0.169	0.491	0.326
	employment	0.543	0.507	0.36	0.097	0.179	0.174
	environment	0.949	0.284	0.737	0.433	0.616	0.776
	EU	0.552	0.833	0.214	0.624	0.566	0.534
	family	0.249	0.154	0.051	0.469	0.281	0.8
	healthcare	0.296	0.215	0.618	0.483	0.854	0.524
	immigration	0.793	0.927	0.816	0.639	0.995	0.872
	social	0.355	0.912	0.422	0.277	0.584	0.112
	tax	0.269	0.497	0.586	0.719	0.051	0.683
I	crime	0.153	0.064	0.198	0.266	0.619	0.021
	defense	0.841	0.955	0.426	0.992	0.383	0.781
	economy	0.188	0.173	0.549	0.101	0.232	0.267
	education	0.627	0.874	0.364	0.123	0.871	0.085
	employment	0.771	0.027	0.949	0.146	0.988	0.002
	environment	0.302	0.43	0.165	0.607	0.096	0.807
	EU	0.013	0.626	0.006	0.764	0.084	0.943
	family	0.195	0.227	0.52	0.405	0.936	0.556
	healthcare	0.419	0.074	0.06	0.251	0.197	0.531
	immigration	0.637	0.622	0.925	0.492	0.934	0.565
	social	0.993	0.009	0.698	0.014	0.559	0.031
	tax	0.825	0.939	0.443	0.961	0.459	0.979
A	crime	0.249	0.012	0.613	0.004	0.382	0.003
	defense	0.726	0.914	0.917	0.42	0.924	0.34
	economy	0.948	0.903	0.477	0.914	0.741	0.722
	education	0.488	0.335	0.36	0.011	0.199	0.048
	employment	0.662	0.069	0.728	0.156	0.827	0.132

|							
	environment	0.228	0.82	0.938	0.938	0.961	0.975
	EU	0.321	0.116	0.738	0.191	0.135	0.314
	family	0.023	0.407	0.009	0.04	0.036	0.189
	healthcare	0.586	0.166	0.903	0.374	0.989	0.503
	immigration	0.233	0.405	0.191	0.735	0.347	0.919
	social	0.316	0.776	0.535	0.825	0.759	0.809
	tax	0.722	0.455	0.856	0.784	0.566	0.783
C	crime	0.435	0.799	0.793	0.895	0.993	0.977
	defense	0.768	0.599	0.554	0.527	0.597	0.379
	economy	0.093	0.712	0.411	0.561	0.5	0.668
	education	0.645	0.832	0.517	0.648	0.834	0.85
	employment	0.414	0.893	0.399	0.829	0.136	0.855
	environment	0.697	0.297	0.263	0.606	0.164	0.645
	EU	0.019	0.977	0.086	0.755	0.29	0.84
	family	0.053	0.173	0.105	0.322	0.189	0.378
	healthcare	0.207	0.079	0.276	0.229	0.424	0.282
	immigration	0.463	0.553	0.481	0.764	0.345	0.221
	social	0.453	0.884	0.773	0.966	0.315	0.951
	tax	0.331	0.31	0.273	0.467	0.433	0.713
V	crime	0.053	0.421	0.012	0.692	0.024	0.635
	defense	0.921	0.7	0.615	0.597	0.843	0.884
	economy	0.335	0.908	0.729	0.965	0.772	0.987
	education	0.46	0.535	0.028	0.551	0.097	0.817
	employment	0.161	0.185	0.291	0.466	0.625	0.361
	environment	0.413	0.136	0.4	0.227	0.696	0.345
	EU	0.271	0.679	0.347	0.5	0.624	0.238
	family	0.331	0.438	0.527	0.651	0.505	0.685
	healthcare	0.727	0.367	0.824	0.605	0.952	0.772
	immigration	0.749	0.025	0.256	0.05	0.179	0.041
	social	0.975	0.163	0.605	0.183	0.661	0.153
	tax	0.293	0.708	0.335	0.537	0.171	0.748
Ø	crime	0.791	0.744	0.419	0.972	0.627	0.559
	defense	0.221	0.187	0.316	0.248	0.622	0.6
	economy	0.756	0.543	0.655	0.44	0.632	0.359
	education	0.654	0.786	0.036	0.839	0.171	0.679
	employment	0.766	0.956	0.495	0.855	0.729	0.872
	environment	0.876	0.685	0.805	0.688	0.968	0.755
	EU	0.412	0.868	0.54	0.68	0.208	0.714
	family	0.815	0.086	0.878	0.26	0.865	0.612
	healthcare	0.236	0.743	0.153	0.592	0.078	0.66
	immigration	0.79	0.185	0.382	0.579	0.576	0.366
	social	0.76	0.673	0.429	0.953	0.06	0.924
	tax	0.079	0.258	0.072	0.391	0.08	0.215

Note: Columns contain p-values (two-tailed test) for the relative salience on media or public opinion to relative salience on Facebook path

Appendix 4: Daily party coherence, poll numbers, and interaction

**Changes in internal coherence (benchmarked to manifesto salience distribution) throughout the campaign**
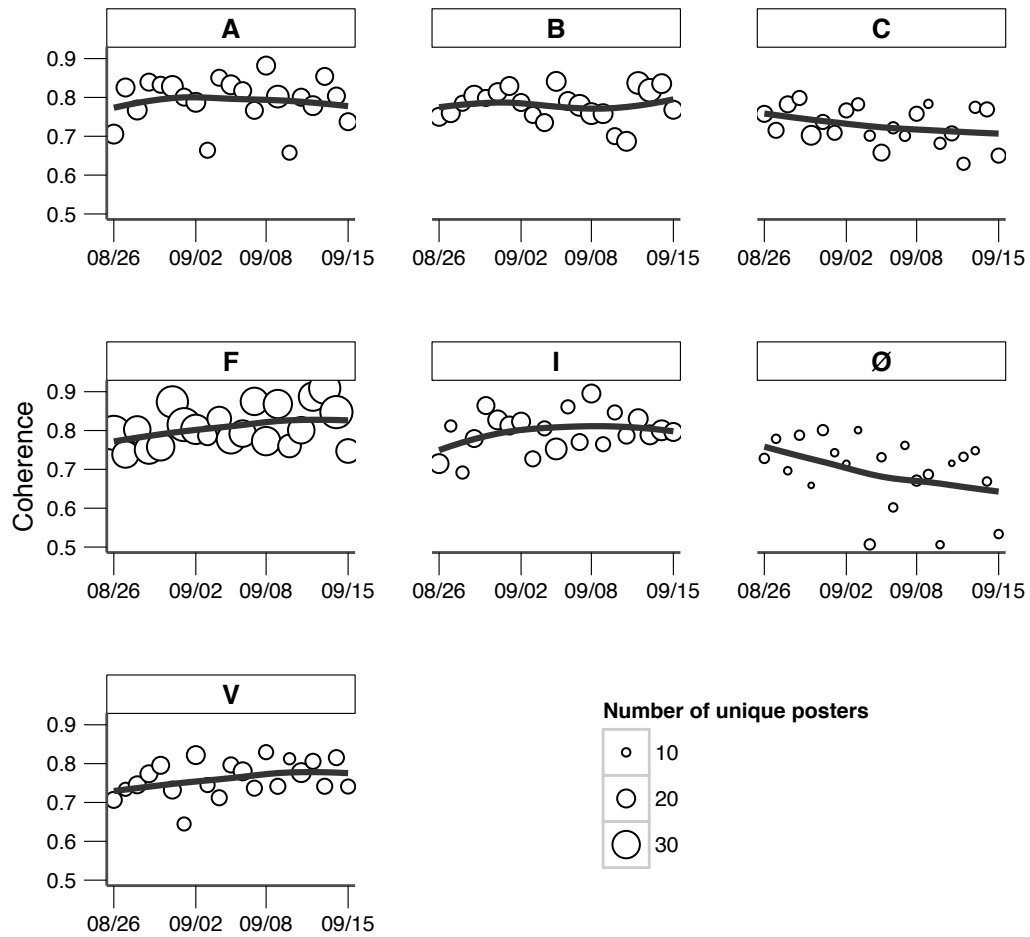
Changes in polling numbers throughout campaign
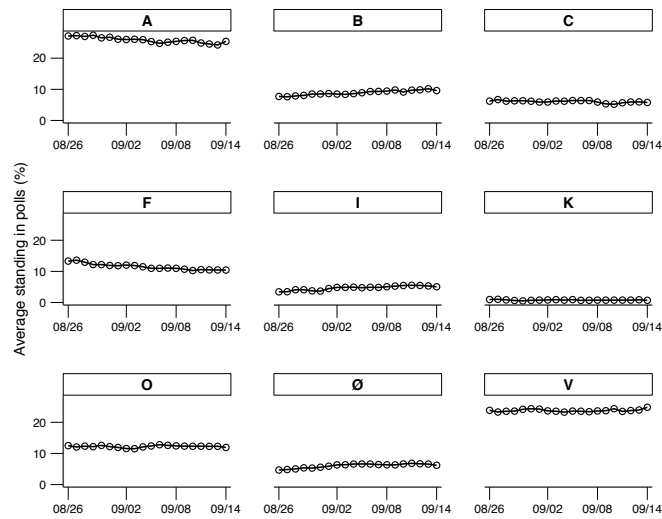
Note: Vote intention expressed in percentage averaged over four polling companies Voxmeter, Gallup, Epinion, and Megafon – from 26 August to 14 September 2011.

Changes in polling numbers throughout campaign, unadjusted y-axes
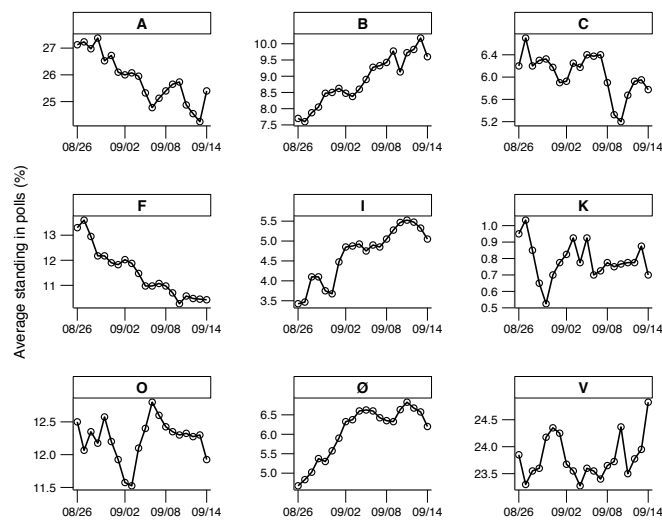
Note: Vote intention expressed in percentage averaged over four polling companies Voxmeter, Gallup, Epinion, and Megafon – from 26 August to 14 September 2011, unadjusted y-axes.