Conversations and Campaign Dynamics in a Hybrid Media Environment: Use of Twitter by Members of the German Bundestag

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Abstract

This article examines how Members of the German Bundestag (MdBs) used Twitter in the context of the country's 2013 federal elections. In particular, we explore the dynamics in the MdBs' use of Twitter during different periods of the electoral term: How do the tweeting habits of MdBs differ by party before and during the election campaign in (a) public versus personal communication and (b) campaign versus policy messages? How are the selection of interaction partners, centralization on leading actors, and reciprocity of the MdBs' Twitter networks affected by election campaigning? We address these questions by conducting a content analysis combined with a network analysis of interaction patterns. The comparative application of both methods explains the differences of MdBs' networks. The comparison clearly exhibits election campaign-driven changes related to the amount of activity and the character of tweeted messages. During the campaign period, MdBs' tweets clearly discussed specific policies less than before. Tweeting about one's personal life occurred also less frequently in the final campaign stage. Instead, the MdBs mainly complement other forms of election campaigning through a vivid metacommunication on campaign developments. Network relations reflect these variations and were less often reciprocated in proximity to the election and showed a higher degree of group homophily. We also found a substantial representation of print and broadcast media actors in the examined @reply networks. It is likely that these interactions and conversations with journalists are part of an MdB's individual performance of "news management."

Keywords

Twitter, election campaigning, parliamentary news management, media hybridity, network analysis

Introduction

In Germany's 2013 general elections, social media was commonly used in the campaign practice of politicians. This article focuses on this phenomenon by comparing German politicians' Twitter network structures and contents, both before and during the election campaign. Twitter has become an especially important space for the "performance of politics" in recent election campaigns (Kreiss, Meadows, & Remensperger, 2014).

In general, social media enables engagement and participation: The constellations between political actors, media actors, and the audience increasingly consist of multifaceted communication and effects. Chadwick (2013) described how politics and media tend to transform and "integrate the logics of newer media practices" (p. 4). This leads to the emergence of a "hybrid media system" in political communication, in which also Internet-driven norms diffuse into politics and media. These norms of "networking, flexibility, spontaneity and ad hoc organization" have generated new expectations about effective forms of political action and campaigning (Chadwick, 2013, p. 210). However, these practices are rather complementing than replacing broadcast-era campaign strategies. As a consequence, political actors do not naturally switch into a mode of interactive communication that could help to develop a more direct relationship with citizens (Graham, Broersma, Hazelhoff, & van 't Haar, 2013). In a recent review of studies, Jungherr (2014) found

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"very little evidence of Twitter being an enabling device for dialogue between politicians and other Twitter users" (p. 48). Studies across various countries and election cycles showed that politicians predominantly used Twitter to broadcast information (Jungherr, 2014). Despite a lack of direct interaction, Twitter offers networked audiences opportunities for public critique over political and journalistic actors, as well as for endorsement and active dissemination of their messages (Kreiss et al., 2014).

Different expectations and interests, driven by older and newer media logics, are both likely to shape the flow of political information on Twitter. The following section will discuss factors that are likely to affect the Twitter use of politicians and might lead to certain dynamics, especially in the context of an election.

In this study, we aim to contribute to this field by addressing three strands of research. The first is the German perspective: Quantitative research on Bundestag members' Twitter interaction networks is presently lacking. Our second area of focus is the communication between elections, apart from actual campaigning. We aim to examine the dynamics of the campaign cycle by systematically approaching the interactions of German parliamentarians on Twitter, both before and during election campaigning, with journalists, citizens, and their peers. Third, we examine how dynamic publishing activities in these periods will alter network relations on Twitter. Thus, we will analyze both, Twitter messages and conversational network activities.

The Twitter Use of Politicians in the Context of Hybridity

A number of studies have addressed the general function of Twitter as a microblogging tool in political communication (Jungherr, 2014). In Germany, Twitter started to play a role in the 2009 election. By November 2010, one-third of all Members of the German Bundestag (MdBs) had subscribed to Twitter (Saalfeld & Dobmeier, 2012). The increasing popularity of Twitter could induce politicians to consider the microblogging service an innovative "bandwagon they need to jump on" (Jackson & Lilleker, 2011, p. 86).

We believe that the reason why Twitter's current use is more substantial is that the political communication ecology is in flux. The network media logic of social media has started to intertwine and overlap with the dominant mass media logic, also in the realm of political campaigning (Chadwick, 2013; Klinger & Svensson, 2014). Social changes and media changes have a complex and reciprocal relationship and both shape political communication. Following the mediatization approach, political actors must adapt to the media logic or even internalize it (Strömbäck, 2008). This adaptation encompasses formal and argumentative aspects (Schweitzer, 2012). However, the mass media as well as journalistic norms and values are not immune to socio-technical changes and modernization. Mediatization is a complex process and, as a concept, not

solely intertwined with a single logic of traditional mass media (Kammer, 2013). In practice, emerging hybrids of newer and older media may shape the ways in which political communication transforms through mediatization. According to Schweitzer (2012), three argumentative indicators have been traditionally used in content analyses of campaign channels to study the mediatization of political communication: (a) *meta-communication*, a focus "on the election campaign itself and the horse-race aspect of the competition in contrast to substantial policy issues" (Schweitzer, 2012, p. 285); (b) *personalization*, a focus on personalities and private lives, especially of leading candidates; and (c) *negativity*, a focus on conflict and criticism rather than on positive self-promotion. These indicators form rules of attention that guide the choice of issues, statements, and actors in the mass media coverage of elections (Kaid & Strömbäck, 2008).

Changes in media consumption and journalistic practices can be a good starting point to understand why the rise of social media also matters to political campaigning. We argue that these changes matter despite the fact that social media, especially Twitter, has a limited user base in electoral terms in Germany and has therefore not been proven to directly affect the election outcome (Metag & Marcinkowski, 2012). According to a comparative Reuters institute news survey, Germany is among the leading countries in terms of traditional news media consumption. Only one-fifth (21%) of Germans receive news from blogs and social media (Hasebrink & Hölig, 2013). Annual survey data revealed that 7% of the German Internet users access Twitter. Even in the age group of 14–29 years, only 9% use Twitter at least weekly (Tippelt & Kupferschmitt, 2015). Following the hybridization approach, these numbers do not necessarily indicate that acting on social media has a rather low impact in Germany. A clear separation of traditional (online) news media and social media is not possible given that journalists often rely on social media as a news source and use social media themselves as a platform for the dissemination of news and information (Broersma & Graham, 2012). A German newsroom survey showed that Twitter has become an important channel for the monitoring of prominent sources (Neuberger, Langenohl, & Nuernbergk, 2014). Here, politicians could provide journalists with quotable "soundbites" up to a maximum of 140 characters (Adi, Erickson, & Lilleker, 2014).

As a consequence of mediatization, political actors need to perform *news management*, which has been defined as a

> strategic variant of public information whereby political actors manage communication in order to influence public opinion by controlling the news media agenda. It is a top down process of communication whereby the media are the means and targets while the strategies are determined by the political objectives of the specific actor. (Pfetsch, 1999, p. 6)

News management builds largely on a "working relationship" with journalists. Personal channels of exchange, as

well as routinized institutional events (such as press conferences, briefings, and background circles), provide opportunities to stabilize this strategic exchange. Both sides largely follow their own rules. Journalists are guided by a news media logic that is shaped by three different dimensions: professionalism, commercialism, and media technology (Strömbäck & Esser, 2014). Twitter, which is increasingly being incorporated into daily routines and practices of news organizations and journalists, complements the working relationship by adding a convenient way to follow politicians' activities and maintain close ties with them (Rogstad, 2014). Therefore, it is likely that also politicians seek regular contact with journalists via Twitter, in order to strategically distribute their messages as part of their (hybrid) news management. Comparative research from the United Kingdom and the Netherlands demonstrated that journalists were the political candidates' most important interaction partners on Twitter—right after contacts with the public and other politicians (Graham, Jackson, & Broersma, 2014). In both countries, journalists accounted for one-tenth of the interactive tweets. A survey by Dohle and Bernhard (2014) showed that German MdBs increasingly communicated via Twitter from 2012 to 2013. Similarly, the presumed influence of Twitter for the dissemination of political information increased (Dohle & Bernhard, 2014).

Twitter also provides opportunities for "non-elite interventions" and "elite–activist interactions" (Chadwick, 2013, p. 87), which political actors must take into account. From a competitive view, to (re)act to political activists' or opponents' messages and to (re)frame information in a timely manner could be another important driver in the emerging dynamic networked environment of political news making. Nevertheless, microblogging has only a limited ability to discuss policy positions in depth.

The personalized and dialogical characteristics of social media have led politicians to communicate more individually, and independently from official campaign strategies (Enli & Skogerbø, 2013; Vergeer, Hermans, & Sams, 2013). Enli and Skogerbø (2013) saw such "blurring boundaries" between the private and the political in social media as being in line with the mediatization and popularization of politics. Furthermore, some sharing information of personal relevance might be expected given that Twitter makes it possible to selectively address particular audiences from within a politician's individual follower network, such as party colleagues, political opponents, citizens, activists, or journalists (Schmidt, 2014). However, Graham et al.'s (2014) findings displayed that sharing of information about one's personal life was only infrequently visible in British (4%) and Dutch (9%) candidates' tweets. Adi et al. (2014) studied Labour peers in the House of Lords and reported personal content in only one-tenth of the Twitter messages. Similar findings were also reported by Glassman, Straus, and Shogan (2011) in their 2009 Congress study of US Representatives and Senators.

Beyond the purpose of news management, there are three additional reasons for politicians to engage in discussions on Twitter: adaptation to platform conventions, representativeness, and beliefs due to certain political or party cultures. Adi et al. (2014) described *responsivity and dialogue* as a strategy to conform to established conventions on Twitter. Conventions in usage (such as hashtags or @replies) and content could both help gather followers and increase network visibility. Earlier research has revealed that US Congress Members and British members of parliament (MPs) mainly used the microblogging service for self-promotion and for one-way communication rather than to actually interact (Golbeck, Grimes, & Rogers, 2010; Jackson & Lilleker, 2011). In their comparison of candidates' tweets in the 2010 election campaigns of the Netherlands and the United Kingdom, Graham et al. (2014) demonstrated that Dutch candidates interacted more often using @replies than their British counterparts. Their content analysis also showed a significant association between the party type and the preferred type of tweets. In the British case, Labour candidates used consistently more often @replies than the Conservatives (Graham et al., 2014).

The likelihood that a representative will engage via participatory practices is likely to be affected by the *political group* to which they belong. In particular, the left-libertarian Green Party is characterized by an emphasis on collective decision-making and high participation (Kitschelt, 1990), which could help to embrace the dialogical potential of social media. Empirical research has shown that the Green Party has been a leading actor in various countries in terms of Twitter use in general (Graham et al., 2014; Vergeer et al., 2013). However, an interactive style was not consistent with a specific party pattern in these studies. According to Saalfeld and Dobmeier (2012), party membership and age were the main factors for predicting whether German MdBs make use of Twitter as well as Facebook. Members of smaller parties and younger members were most likely to adopt new media technology. However, the individual style of their everyday Twitter use appears to be more difficult to predict and also seems to be independent from a mastered party line.

Following these considerations, politicians' tweeting habits and the contents of their tweets are influenced by individual political objectives, strengths of political beliefs, the willingness to perform news management, the openness to engage in participatory debates, the social media self-efficacy of the politician, and perceived expectations of their imagined network on Twitter. Furthermore, tweeting habits are likely to vary by different phases of the legislature. During election campaign periods, party organizations increasingly provide campaign materials and might also exert influence on communicating party messages with a coherent character and style to mobilize for the election. Candidates then predominantly try to "turn their followers and fans into voters and activate their networks for campaign purposes" (Enli & Skogerbø, 2013, p. 771). This activity is mirrored by the surrounding "Twittersphere," which tends to be quite politicized

Table 1. Tweeting MdBs and Shared Tweets During Both Periods by Party.

	Bundestag seats (%)	Tweeting MdBs per period		Percentage of tweeting MdBs		Shared tweets	
	In 2013	*Pre-election* (20–26 March 2013)	*Election* (15–21 September 2013)	March	September	March	September
CDU/CSU	237 (38.2)	54	57	22.8	24.1	1,096	2,174
SPD	146 (23.5)	43	45	29.5	30.8	1,027	1,402
FDP	93 (15.0)	35	39	37.6	41.9	538	998
Green Party	68 (11.0)	42	46	61.8	67.6	1,058	2,330
Left Party	75 (12.1)	34	33	45.3	44.0	525	777
Total	620[a]	208	221[a]	33.5	35.6	4,244	7,736[a]

CDU: Christian Democratic Union; CSU: Christian Social Union; SPD: Social Democratic Party; FDP: Free Democratic Party.
[a]Also includes independent MP Wolfgang Nešković.

in proximity to election events (Bruns & Burgess, 2011). In this dynamic context, tweeting habits are likely to reflect an increased level of campaigning. Apart from election campaign periods, politicians probably use Twitter more often to draw attention to certain problems and to interact with their particular network (Glassman et al., 2011). These activities could help to maintain relations or to gain knowledge of the wishes and needs of the people they represent.

Although the literature has discussed a "permanent campaign" mode (Farrell, 2006; Larsson, 2014), research has also shown that digital efforts are mainly centered on election periods. The varying intensity of campaigning must be taken into account. It is likely that hybridity (i.e., the confluence of political, media, and network logics), as well as certain campaign dynamics, leads to rather flexible tweet patterns of politicians. This means that content and network dynamics are likely to occur.

Research Focus and Methodology

Most of the extant studies on politicians with regard to Twitter have centered on elections (Jungherr, 2014). Further examination is needed in order to explore whether the identified predominant communication patterns extend beyond the rather limited periods of intense election campaigning (Graham et al., 2014). Against this background, we conducted a combination of content analysis with network analysis to analyze the interplay between changes of activity, tweet habits, and interactions of Members of the German Bundestag (MdBs) on Twitter during different periods of the electoral term.

This led us to the following two research questions:

RQ1. How do the tweeting habits of MdBs differ by party before and during the election campaign period in (a) public versus personal communication and (b) campaign versus policy messages?

RQ2. How are the selection of interaction partners, centralization on leading actors, and reciprocity of the MdBs' Twitter networks affected by election campaigning?

Cases, Population, and Sample

In order to compare the tweeting activity of different phases and to detect the degree of sustainability of German MdBs' use of Twitter, we included data from two timeframes in the analyses. The first timeframe was a pre-election period (20–26 March 2013), still dominated by routine political debate and governing. The second period (15–21 September 2013) was close to Election Day (22 September) (see Table 1 for an overview).

Via the Twitter Streaming application programming interface (API), we captured tweets using the open-source tool *yourTwapperkeeper* (yTK) (Bruns, 2012). We followed an *account-centered approach* by searching for all tweets that were composed by a predefined set of accounts of MdBs.

We identified the Twitter accounts held by MdBs via extensive systematic manual searches and cross-checking of different sources. The main sources were the official websites of the MdBs and the additional profile information for MdBs provided at the Bundestag's website.[1] For an initial search, we also used an MdB list of Twitter accounts[2] provided by the platform Pluragraph. Personal accounts of politicians were always preferred over team accounts.

We captured all data from these accounts, starting on March 2013. A repeated search for accounts led to us finding that 338 out of 620 MdBs used Twitter as of September 2013 with 193 verified accounts according to Twitter profile information. We also included unambiguous accounts without verification after an additional check by the researchers. Accounts had to be in regular use and there could not be any evidence of a potential fake or satire. Overall, the tracking resulted in 11,980 tweets (Table 1).

Coding Categories

We conducted a quantitative content analysis to provide information about the quality of single interactions, as well as about characteristics of the composed tweets.

The coding scheme referred to different levels and attributes of each unit: (a) author/account (gender, party affiliation, status, verification), (b) context (public/personal communication), (c) content (policy references), (d) evaluations of mentioned political actors, (e) forms of political campaigning and dialogue, and (f) networking behavior (hyperlinks, hashtags, @replies, retweets). The applied context variable refers to the relevance of the disclosed information from a societal viewpoint: "personal communication" in this analytical sense discloses information that may be considered only of personal relevance (e.g., tweeting about one's emotional state, a current location, or a holiday impression). Revealing personal information is one indicator for the personalization of politics (Schweitzer, 2012). Conversely, "public communication" is considered to be of social or public relevance. It may contain personal impressions of political or other societal events, but the information itself is a contribution of general interest. Public communication is not necessarily related to political matters and could comprise other fields of public interest (e.g., cultural, economic, or technical developments). We also determined whether tweets could be considered as *political messages* in a narrow sense. The content and purpose of these tweets are related to political matters (such as updates from the campaign trail, written or visual statements on political issues or affairs). A further variable determines whether a political contribution refers to specific *policy fields*. This is not necessarily the case given the importance of "image and style" in modern campaigns (Farrell, 2006, p. 127). We used three variables to classify whether tweets containing public communication also embody typical *campaigning elements* (sharing of campaign material, voter mobilization efforts, calls for donations), all of which are likely to increase with the ballot box in sight. Finally, we analyzed whether MdBs' tweets contained clear personal or political attacks on competing parties or candidates (*negative campaigning*, see Lau & Pomper, 2001). As a set, these variables allow us to classify specific campaign styles. Furthermore, the context mode of the tweet (personal or public relevance) and the extent of policy-related contributions make it possible to explore whether personalization efforts are made at the expense of substantial policy issues.

We analyzed the data by mapping the communication networks among the MdBs as well as those networks between them and all other actors they retweeted or @replied to. This approach enabled us to describe who it is that parliamentarians actively establish relations with via Twitter. The networks that were extracted from the data sample are based on user relations that were either generated by @replies or by retweets (for a discussion of their functions, see Bruns & Moe, 2014). To specify the interaction partners, all actors in the network were classified manually according to their main public role. These classifications not only provide us with the opportunity to "map" @reply and retweet network graphs but also enable us to explore the network structures more systematically and in greater depth. The network analysis was performed using UCINET 6.499 and Gephi 0.8.2.

Reliability

The content analysis for each investigated period was conducted by undergraduate student coders and researchers. All coders were trained with the researchers for several weeks in two research classes. In June 2013, a first class with 16 members coded the entire March period. In January 2014, the second class with 20 coders examined the September period. Both classes were tested with 30 randomly selected units. The reliability assessment in the first class achieved a satisfying level that was clearly above .8 (Holsti's method, 480 coder decisions per variable). The content variables discussed in this article reached the following percentage agreements—context of tweet (public/personal communication): .76; relationship to politics/political communication: .78; identification of a specific policy field: .69; forms of political campaigning and dialogue: .71. The classification of actor types for those accounts, which were @replied (.81) or retweeted (.96), also showed good agreement. The reliability scores improved in the second class. In this group, we conducted an additional test: the first one was performed (a) before the regular coding and the second one (b) during the regular coding. The second reliability assessment was hidden within the coders' tweet files and consisted of 660 decisions per variable. Holsti's coefficient results were as follows—context of tweets: (a) .85, (b) .92; relationship to politics/political communication: (a) .77, (b) .88; and identification of a specific policy field: (a) .75, (b) .76. The different forms of campaigning activities and voter interaction were also more satisfying: (a) .84, (b) .85. Coders reached very good agreement on the classification of actor types in @replies (.91/.92) and retweets (.93/.93). Given the exploratory nature of this analysis and the complexity of the variables, the reported intercoder reliabilities are acceptable (Neuendorf, 2002).

Findings

Tweeting German MdBs

Based on the continuous tracking, we can state that more than half of the MdBs have their own Twitter account, but only one-third actually composed tweets in the selected time periods (Table 1). In the pre-election period, 208 MdBs contributed tweets. In the election period in September 2013, we observed only a small increase, with 221 contributors. Although the absolute number of tweeting MdBs hardly increased, their posting activity almost reduplicated in the election period (March: 20.4 tweets per MdB, standard deviation [SD]: 36.5; September: 35 tweets per MdB, SD: 41.5). The Green Party ("Die Grünen") exhibited the highest *share of tweeting MdBs* in a parliamentary group in both periods examined. The general percentage of actively tweeting fraction members in the three smaller parties (Green Party, Free Democratic Party [FDP], Left Party) was higher than in the "catch-all-parties" of Christian Democratic Union/Christian

Social Union (CDU/CSU) and Social Democratic Party (SPD) (Table 1). Compared by party, the *posting activity* per MdB was imbalanced. Especially, the Green Party's MdBs (March: *Mdn* = 10.5 tweets, September: *Mdn* = 33.0 tweets) and the Conservatives (CDU/CSU) showed a substantially increased posting rate in the last week of the campaign (March: *Mdn* = 8.0, September: *Mdn* = 26.0). MdBs of the SPD (*Mdn* = 14.0 vs *Mdn* = 19.0), the Left Party (*Mdn* = 10.5 vs *Mdn* = 16.0), and the FDP (*Mdn* = 8.0 vs *Mdn* = 13.0) increased tweeting at a lower rate. Compared by gender, the posting activity did not differ in a significant way.

The *distribution of composed tweets* was clearly not egalitarian in both periods, but tended to be slightly more moderate directly before the election. We found 51% of the MdBs with posting activity tweeting at least 10 messages or more per week in March, but 72% in September. The Green Party exhibited the most visible presence before the election. Up to 94% of their MdBs published 10 or more tweets per week. The other parties only reached values between 56% and 74%.

Tweeting Behavior Before and During the Election Campaign

The purpose of RQ1 is to compare changes in tweeting habits before and during the election campaign period. In the routine phase in March, we identified 3,449 self-composed tweets by MdBs (81%, *n* = 4,244) and 795 retweets. In total, more self-composed tweets were published in the September timeframe, shortly before Election Day (5,836 tweets). The amount of retweets also increased (1,900 tweets). Thus, the share of self-composed tweets among all tweets was lower than in the pre-election period (75%, *n* = 7,736). Generally, only a few of these tweets were marked as team messages (March: 6%, September 3%). In these cases, a shortcut was used to indicate that the MdB has not written his or her tweet personally.

Each self-composed unit was analyzed for its context mode (*public or personal communication* as described above). Most of the pre-election tweets contained publicly relevant information (81%, *n* = 2,902). In all, 18% of the tweets contained information of personal relevance only. Some tweets also combined both modes, for example, disclosing personal information as well as shortly mentioning a matter of public concern (2%). We observed significant differences among MdBs of different parties during the pre-election period (Cramer's *V* = .186, *p* < .001, *Chi-square* = 100.6, *df* = 8). In particular, members of the governing CDU/CSU (22%, *n* = 703) and the SPD (24%, *n* = 714) displayed more personal messages on Twitter than those of other parties (FDP: 8%, *n* = 386, Green Party: 14%, *n* = 687, Left Party: 13%, *n* = 412). During the election period, MdBs' own tweets generally contained more publicly relevant communication (94%, *n* = 4,649) and party differences diminished. The results from both compared

periods differed clearly (Cramer's *V* = .241, *p* < .001, *Chi-square* = 439.5, *df* = 2).

Table 2 narrows down the proportion of self-composed, publicly relevant tweets that also contain *political communication in a narrow sense*. These tweets were examined regarding contextual references to politics, to polity, and/or policy matters.

During both periods, MdBs' tweets with publicly relevant communication mostly focused on the political domain and not on other topics. The differences between both timeframes were only moderate. However, not all of these tweets necessarily contained references to specific policy areas. Our analysis shows that policy references occurred more often during the pre-election period, when the Bundestag was still sitting. Almost three-quarters (72%) of the respective tweets discussed policies during that time. The three smaller parties—the Left Party, the Greens, and the FDP—generally showed the highest proportions of tweets discussing specific policies (Table 2). But the use of Twitter significantly changed during the election period. In September, only less than one-quarter of the tweets were policy-related. This indicates a focus on the election campaign itself, as expected by Schweitzer (2012).

Table 3 provides information about different *forms of political campaigning* appearing in tweets (campaigning for party-related activities and information, mobilization, calls for donations, negative campaigning) as well as dialogic approaches to get in touch with citizens and voters.

During both periods, MdBs' tweets mainly provided information about party-related activities and events. Most of the tweets briefly informed about local campaigning activities, such as constituency visits. This rather simple form of campaigning was clearly more visible in September than in March. Party differences were more prevalent in the pre-election period (Cramer's *V* = .170, *p* < .001, *Chi-square* = 68.3, *df* = 4) than in the election period (Cramer's *V* = .099, *p* < .001, *Chi-square* = 43.3, *df* = 4). On Twitter, the governing parties showed relatively little campaign activity in March, while they mostly published campaign tweets in September.

Mobilization was rare during the pre-election period. Left Party MdBs, in particular, exhibited higher values for mobilization and political campaigning earlier. In September, the number of tweets containing mobilization efforts increased significantly across all parties.

Minimal differences exist regarding the prevalence of negative campaigning. Overall, the tweeting behavior seemed to be rather inoffensive without any harsh attacks on opponents. Calls for donations via Twitter were rare. The latter finding is unsurprising for the German political system because the considerable public funding means that parties do not rely on fundraising.

Finally, Table 3 also presents findings about the interaction of parliamentarians with their voters. Here, the CDU/CSU (March: 15%, *n* = 537; September: 9%, *n* = 1,217) and

Table 2. Political Communication and References to Specific Policy Fields in Self-Composed Tweets (%).

	CDU/CSU		SPD		FDP		Green Party		Left Party		Total	
	March	September	March	September	March	September	March	September	March	September	March	September
Tweets containing political communication	n=525	n=1,172	n=522	n=806	n=349	n=645	n=576	n=1,155	n=345	n=533	n=2,317	n=4,311
	79.4	90.3	92.0	93.2	94.0	94.6	94.4	97.2	88.4	94.9	89.5	93.9
Tweets containing political communication with reference to a specific policy field	n=360	n=1,004	n=430	n=715	n=308	n=574	n=508	n=1,021	n=274	n=465	n=1,880	n=3,779
	65.6	12.4	58.8	16.2	71.8	21.8	81.5	37.9	86.1	26.5	72.3	23.2

Tests for independence: March (between parties) Cramer's $V=.189$, $p<.001$, *Chi-square*=82.9, *df*=4; September (between parties) Cramer's $V=.109$, $p<.001$, *Chi-square*=51.5, *df*=4

Between periods: *Phi*=.079, $p<.001$, *Chi-square*=41.4, *df*=1

Tests for independence: March (between parties) Cramer's $V=.225$, $p<.001$, *Chi-square*=94.8, *df*=4; September (between parties) Cramer's $V=.238$, $p<.001$, *Chi-square*=213.4, *df*=4.

Between periods: *Phi*=−.474, $p<.001$, *Chi-square*=1,275.3, *df*=1.

CDU: Christian Democratic Union; CSU: Christian Social Union; SPD: Social Democratic Party; FDP: Free Democratic Party.

the SPD (March: 13%, $n=534$; September: 8%, $n=827$) could be considered as the frontrunners. In both periods, the CDU/CSU was most engaged in dialogues with voters on Twitter. This could be explained by the unique fact that most of CDU/CSU fraction members also were elected constituency candidates (89%, $n=237$). Our findings show that elected constituency candidates' tweets generally presented more voter interaction than party list candidates' tweets (*Phi*=.110, $p<.001$, *Chi-square*=82.1, *df*=1).

Network Interaction and Homophily Patterns

RQ2 asks whether the dynamic MdBs' network of Twitter interactions reflects the described changes of tweeting habits before and during the election period. We discuss this question here by analyzing the networks based on the MdBs' use of @replies and retweets. We identified these networks through a technical search, following the approach suggested by Bruns and Stieglitz (2013). In addition, also our manual content analysis reviewed the number of tweets containing Twitter operators.

We found that exactly half of all self-composed Tweets from the pre-election period ($n=3,449$) contained one or more @replies. The MdBs did not use the @reply operator to the same extent (Table 4). While @replies were more popular in tweets posted by members of the Greens and Social Democrats, they were only observable in one-quarter of the tweets composed by Left Party MdBs. CDU/CSU and the FDP showed an intermediate position regarding the usage of @replies (Table 4). Although we observed an elevated level of tweeting in September, it seems that the @reply operator was less used in the election period than in the pre-election timeframe. In September, 40% of MdBs' own tweets contained this operator ($n=5,836$).

Overall, retweeting was less common than the use of @replies in both periods. Sent retweets were rarely edited or modified by the MdBs (March: 8%, $n=795$; September: 4%, $n=1,874$). In September, the number of all retweets increased significantly. Moreover, the findings in Table 4 show that the parties differed clearly in their application of retweets.

The network analysis of both time periods makes it possible to explore the number of parliamentarians using @replies in more detail. Using both datasets, the specific operator-based interactions, both among party members and with other actors, are described. Note that the network size does not fully reflect the numbers shown before. Here, the level of analysis is based on accounts, which means that data from single tweets were aggregated for each node.

The comparison of the two selected periods in Table 5 provides an overview on how different network characteristics may reflect changing tweeting habits. The numbers are shown separately for each timeframe and network type (@reply or retweet). For analytical reasons, we also include the network characteristics for MdB-only subnetworks. Within these subnetworks, only MdBs could have been addressed.

Table 3. Forms of Political Campaigning and Voter Interaction (%).

	March		September	
	n		n	
Political campaigning (e.g. for party-related events, activities, or information) (*Phi* = .202, *p* < .001, *Chi-square* = 276.7, *df* = 1)	2,371	19.5	4,441	39.3
Political mobilization (e.g. call for votes, demonstrations, and further participation) (*Phi* = .112, *p* < .001, *Chi-square* = 86.2, *df* = 1)	2,380	3.4	4,476	9.7
Call for party-related donations (ns)	2,389	0.1	4,501	0.1
Dialogue with citizens and voters (e.g. feedback call and call for ideas) (*Phi* = −.050, *p* < .001, *Chi-square* = 17.3, *df* = 1)	2,338	9.1	4,473	6.3
Negative campaigning (ns)	2,380	4.2	4,471	3.6

Table 4. @replies and Retweets in MdBs' Tweets by Parties.

	@replies[a] (March)		@replies[a] (September)		Retweets (March)		Retweets (September)	
	%	Absolute	%	Absolute	%	Absolute	%	Absolute
CDU/CSU	52.4	453	42.6	739	21.2	232	20.2	440
SPD	60.9	560	40.1	472	10.5	108	16.1	226
FDP	35.1	149	27.5	217	21.2	114	20.9	209
Green Party	54.9	428	45.3	657	26.4	279	37.8	880
Left Party	26.6	123	29.9	197	11.8	62	15.3	119
Total	49.7	1,713	39.3	2,282	18.7	795	24.4	1,874

CDU: Christian Democratic Union; CSU: Christian Social Union; SPD: Social Democratic Party; FDP: Free Democratic Party.

Tests for independence: @replies: March (between parties) Cramer's *V* = .236, *p* < .001, *Chi-square* = 192.6, *df* = 4; September (between parties) Cramer's *V* = .132, *p* < .001, *Chi-square* = 100.5, *df* = 4; Between periods: *Phi* = −.101, *p* < .001, *Chi-square* = 94.8, *df* = 1; Retweets: March (between parties) Cramer's *V* = .160, *p* < .001, *Chi-square* = 109.0, *df* = 4; September (between parties) Cramer's *V* = .210, *p* < .001, *Chi-square* = 339.4, *df* = 4; Between periods: *Phi* = .067, *p* < .001, *Chi-square* = 53.3, *df* = 1.

[a]Only self-composed tweets were considered for the analysis.

Table 5. Network Characteristics of Retweet and @reply Networks During March and September (With MdB-Only Subnetworks).

	Nodes	Ties	Dyad reciprocity	Density	Avg. weighted degree
Retweets					
March: all	494	644	.0142	.003	1.634
September: all	948	1,450	.0062	.002	2.135
March: MdB-only	117[a]	182	.0520	.017	1.983
September: MdB-only	123[a]	231	.0405	.020	2.463
@replies (only self-initiated)					
March: all[b]	986	1,308	.0464	.002	2.388
September: all[b]	1,452	1,897	.0260	.001	2.096
March: MdB-only[b]	115[a]	251	.3005	.034	3.870
September: MdB-only[b]	121[a]	270	.2162	.033	3.959

MdB: Member of the German Bundestag.

[a]Without isolates (degree < 1).

[b]@replies within retweets not included, unless author tweeted them directly.

The network metrics clearly indicate an effect of campaigning. More than 460 additional nodes joined the September network built on conversation via @replies. As shown above, retweeting also occurred more often. In the election campaign period, there was a 92% increase in the number of accounts in the retweet network compared to the pre-election network. Both patterns seem to follow the pace of a growing MdB activity on Twitter.

Table 5 also provides information about the number of ties (or edges) among the nodes found in the networks. Based on the combination of these data, the *network density* was calculated. The network density is the average

Table 6. Actors Receiving @replies and Retweets in MdBs' Tweets Classified by Type (%).

	@Replies[a]	@Replies[a]	Retweets	Retweets
	March (*n* = 2,295)	September (*n* = 2,875)	March (*n* = 774)	September (*n* = 1,912)
Political actors	49.2	44.5	61.6	60.5
Journalistic actors	9.3	14.1	15.6	15.8
Ordinary citizens	35.0	36.8	12.9	18.4
Other	6.4	4.7	9.8	5.3

MdBs: Members of the German Bundestag.
Tests for independence: @replies: Between periods—Cramer's *V* = .087, *p* < .001, *Chi-square* = 39.1, *df* = 3; Retweets: Between periods—Cramer's *V* = .100, *p* < .001, *Chi-square* = 27.0, *df* = 3.
[a]Only self-composed @replies were considered in the analysis.

proportion of lines incident with nodes in the graph (Wasserman & Faust, 1994, p. 102). An increasing size of nodes affects the density: More edges need to be present to hold a comparable density value in a network of bigger size. Therefore, @reply networks among MdBs were denser than retweet networks. This is also reflected by the given weighted average degree of a node in each MdB-only network. Moreover, the comparison of March and September @reply networks shows that the density remains on a steady level, although a lot more nodes are represented in the September graph. The statistics for subgraphs consisting only of MdBs indicate, in particular, that the average number of @replies (as shown by the number of present ties) addressing other MdBs remained rather stable.

Retweets from and @replies sent to other MdBs tend to be reciprocated less during the campaign period, as indicated by the *dyad reciprocity* of the subgraphs. The dyad reciprocity describes the number of reciprocated dyads divided by the number of all adjacent dyads in a graph. The culminating election campaigns in September may have affected the resources for mutual conversation. Here, the dyad reciprocity shows that *mutual retweeting* among MdBs occurred only rarely (4%), while mutually @replying others was more common (22%).

The content analysis provides further information about the *types of actors* in the MdBs' networks who are @replied to or retweeted. In the pre-election period, half of the @*reply-partners* were other political actors (Table 6). These numbers also reflect multiple selections of a given actor. One-third of the @replies were directed to "ordinary citizens" whose accounts showed no representation of a social group or party. One-tenth of cases involved MdBs mentioning accounts from journalists or newsrooms. Other actor types were only @replied to in single cases. The comparative analysis shows a minor statistical difference between the two periods. Politicians were less engaged in Twitter conversations with their peers directly before the election, at which time journalists' accounts tended to receive more attention from MdBs. Generally, the revealed pattern also varied by party affiliation. Only the Greens (March: 59%, *n* = 691; September: 61%, *n* = 900) mentioned other politicians'

accounts in a majority of cases in both periods. When politicians received @replies, we examined whether these members or their messages were positively or negatively evaluated in the tweet. In both periods, we found more positive evaluations than negative evaluations.

Furthermore, an examination of the related media sector in the case of journalistic actors reveals that especially broadcast media received more @replies directly before the election (March: 23%, *n* = 178; September: 45%, *n* = 345). Conversely, print media accounts were more important in the pre-election period (54% vs 44%, Cramer's *V* = .251, *p* < .001, *Chi-square* = 33.0, *df* = 3). Overall, only 14% of the @replies led to digital-only media.

The *retweet* pattern deviates from the use of @replies (Table 6). MdBs from all parties tended to retweet other political actors in a majority of the cases. Nevertheless, we found statistical differences by party affiliation. Only the FDP members retweeted journalistic accounts in more than one-fifth of the cases in both periods. The Greens led in terms of retweeting political actors.

Given that most interaction partners are politicians, it is promising to further explore differences among political parties from a network analysis perspective. The classification of all MdBs by party affiliation makes it possible to measure *homophily patterns* in the networks. It is likely that the election campaign will affect the visibility of members of opposing parties in each MdB's Twitter messages.

The E-I index was analyzed in order to describe homophily patterns in the networks (see Krackhardt & Stern, 1988). It shows specific @reply preferences on a party level, as well as differences in these preferences between both studied timeframes (Table 7). The E-I index was calculated with UCINET and measures the ratios between group-external and group-internal ties for each individual actor, subgroups, and the entire network. The index ranges from −1 to +1. An E-I index close to −1 indicates that the group is exclusively focused on itself. A ratio close to +1 indicates that the group is totally focused outside itself, which makes it the opposite of group homophily.

In the networks of both periods, Green MdBs were the most active @reply group and they shared the most

Table 7. @reply and Retweet Homophily (Based on E-I Group Indices).

	@replies (MdB-only)		Retweets (MdB-only)	
	March	September	March	September
	E-I index (*n* = 115)	E-I index (*n* = 121)	E-I index (*n* = 117)	E-I index (*n* = 123)
Group level				
CDU/CSU	.000	−.106	−.477	−.704
SPD	.106	.091	−.500	−.529
FDP	.500	.200	−.083	−.763
Green Party	−.429	−.258	−.687	−.872
Left Party	−.333	−.622	−.750	−.949
Network level				
E-I index	**−.088***	**−.144***	**−.514***	**−.793***
E-I index (expected)	.583	.571	.597	.557
External ties	176	190	84	46
Internal ties	210	254	262	398

MdBs: Members of the German Bundestag; CDU: Christian Democratic Union; CSU: Christian Social Union; SPD: Social Democratic Party; FDP: Free Democratic Party.
n refers to the number of MdBs in the given networks.
*$p < .05$ (permutation test using 5,000 iterations).

group-*internal* relations. The analysis shows balanced E-I ratios for CDU/CSU and SPD. Thus, no clear domination of group-external or group-internal relations was visible. Mainly, the FDP used @replies for interactions with members of other parties, while Greens and Leftists, in particular, were much more oriented toward their own group members. Closer to the election, these preferences were only moderately altered toward group homophily.

In the case of retweets, the E-I analysis exhibits clear results. The negative E-I index for the whole network shows a clear overweight of fraction-internal ties in both periods, but especially shortly before the election. This picture does not differ greatly at the group party level. Retweets of political opponents occurred rarely. The Left Party MdBs seemed to focus almost exclusively on their fellow party members.

These results are supported by the network graph for the September period (Figure 1). The overwhelmingly in-group orientation of all parties is clearly recognizable by the separated node colors. The graph also indicates the importance of certain leading candidates shortly before the election. In particular, several Green MdBs prominently retweeted their frontrunners (Katrin Goering-Eckardt and Jürgen Trittin). This pattern was new compared to the pre-election network.

Finally, the analysis focuses on the different *centralization of the networks*. Nodes of non-parliamentarians are also included. Centralization measures quantify "the range or variability of the individual actor indices" (Wasserman & Faust, 1994, p. 180) and express the degree of variance in a given network as a percentage of that of a perfect star network of the same size. The standardization provided by the indegree centralization group index indicates the proportion of actors who chose the actor with the largest observed value in the network (Wasserman & Faust, 1994, pp. 180-202). The

results in Table 8 indicate that the increased activity in the last week of campaigning in September also affected the level of network centralization. The indegree centralization for the whole network was slightly stronger in the September networks.

The given outdegree centralization describes the proportion of choices made by the actor with the largest observed outdegree as a percentage of the theoretical maximum in a network of the same size. The outdegree centralization in the September retweet network decreased, which could be interpreted as a direct consequence of the overall expanding tweet activity in the last week of campaigning. Thus, the most active accounts are joined by a broader subset of more active contributors. The partial increase of the indegree-based centralization also reflects typical forms of campaigning, which traditionally focus on the leading candidates.

Conclusion

As stated in the theoretical discussion at the beginning of our article, Twitter fulfills various functions for political actors in the context of hybridity and the mediatization of political communication. From the perspective of a politician, it is not only the interactive potential of social media in the light of democratization that matters. Politicians primarily exert those practices that will help them to sustain or gain power and public influence. The tangible interdependence of older and newer media logics in the field of politics and media encourages politicians to use social media as an additional channel to perform news management (Chadwick, 2013). This includes a broadcasting mode through the public distribution of messages and may explain why many Twitter studies focusing on political campaigns found that politicians are not overwhelmingly
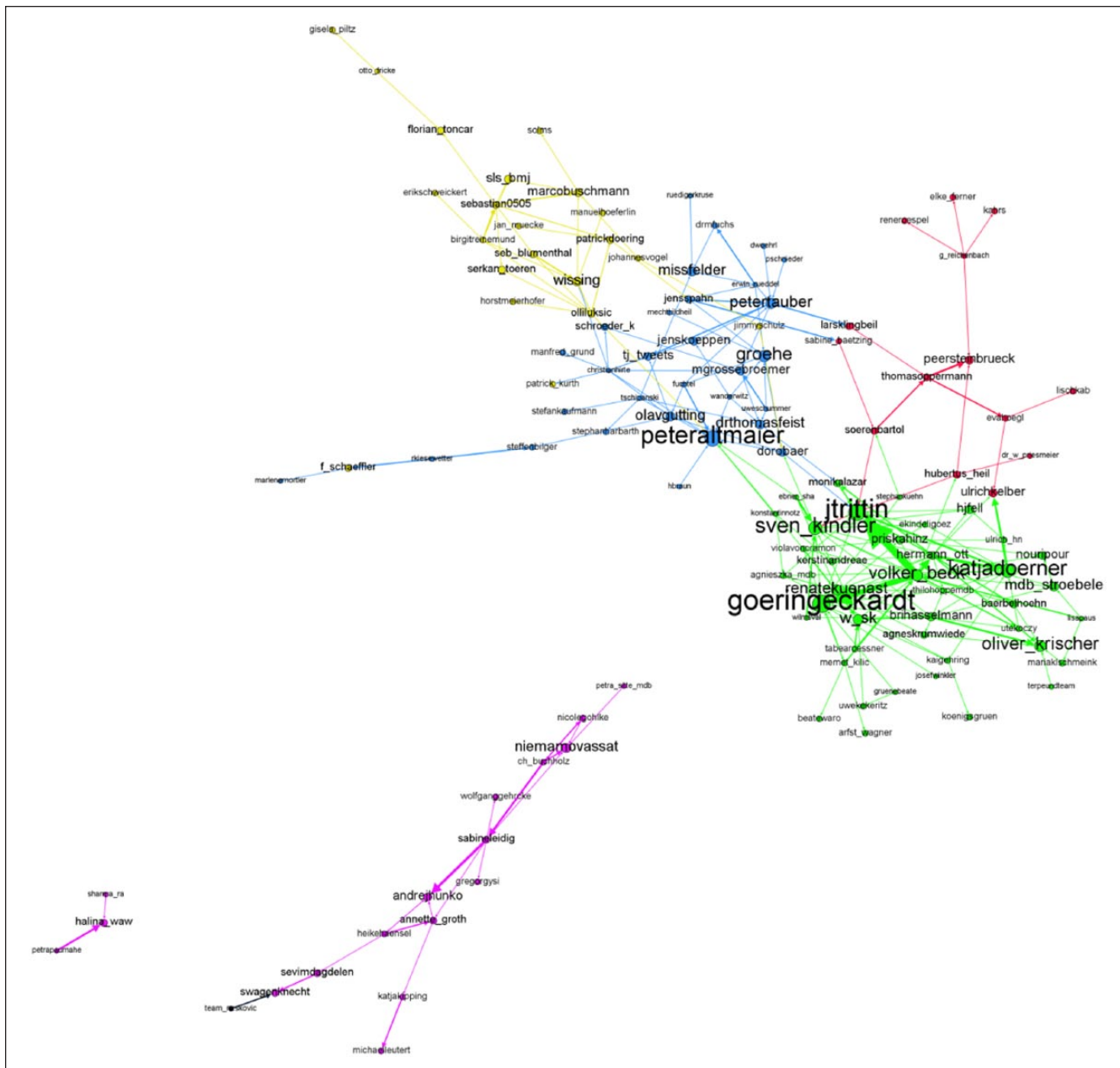
Figure 1. Retweet network (MdB-Only, September 2013).
Label: all; Algorithm: Yifan Hu; Nodes: 123; Ties: 231.
Colors (by party): blue—CDU/CSU; red—SPD; yellow—FDP; green—Green Party; purple—Left Party.
Node size/label size adjusted to indegree.

engaged in a dialogue with citizens on Twitter (Golbeck et al., 2010; Graham et al., 2013; Jackson & Lilleker, 2011; Jungherr, 2014). Our results confirm these findings, but they also exhibit dynamics that should not be overseen. In our case, the amount of politicians' Twitter messages, as well as their content, clearly varied over time. The comparison of two week-long periods exhibited election campaign-driven changes. In the final stage of a campaign, the distribution of composed tweets was less skewed and posting rates increased. Although the

activities of the MdBs differed on a party level, substantial changes were observed in every group. The network metrics show that this was associated with a tendency toward a less reciprocated exchange of messages and a less centralized pattern of sent tweets across all parties shortly before the election. In the case of retweets, fellow party members were particularly strongly preferred. Also, the quality of the messages changed toward the election. During the examined pre-election period, all parties' MdBs tended to post more

Table 8. Indegree and Outdegree Centralization in Retweet and @reply Networks.

	Nodes	Indegree centralization (%)	Outdegree centralization (%)	Maximum indegree[a]	Maximum outdegree[a]
Retweets					
March: all	494	1.8	11.7	10	59
September: all	948	2.6	7.6	26	73
March: MdB-only	117[b]	4.7	8.2	7	11
September: MdB-only	123[b]	8.4	9.2	12	13
@replies (only self-initiated)					
March: all[c]	986	1.0	14.6	11	145
September: all[c]	1,452	1.4	7.4	21	109
March: MdB-only[c]	115[b]	7.8	14.0	11	18
September: MdB-only[c]	121[a]	15.8	9.9	21	14

MdB: Member of the German Bundestag.
[a]Non-weighted indegree/outdegree of an actor in binary networks.
[b]Without isolates (degree < 1).
[c]@replies within retweets not included, unless author tweeted them directly.

policy-focused tweets, whereas this pattern diminished directly before the election. In the same way, tweeting about one's personal life occurred less frequently during the campaign than before. Especially the numbers reported for the pre-election period were considerably higher than in a comparable study (see Graham et al., 2014). With the ballot box in sight, various MdBs posted their campaigning activities and informed followers about rallies or party events.

What can we derive from these findings? First, these activities mainly take place to complement other forms of election campaigning, both online and offline. In this way, Twitter provides a space for vivid metacommunication on campaign developments and politics (Schweitzer, 2012). Second, we cannot say that permanent campaigning occurs on Twitter in a comparable way throughout the entire term. Along with a generally more politicized Twittersphere, campaigning also intensifies in proximity to the election and around related TV events on Twitter (Bruns & Burgess, 2011). Apart from these dynamic patterns, we found a substantial representation of journalistic actors in all politicians' networks. It is likely that these interactions are part of an MdB's individual performance of "news management." Sustaining these relations is relevant throughout the term of a representative. However, even here, our findings reveal some dynamics: broadcast media accounts were clearly more dominant interaction partners in the last week of the campaign—a period also known for intensified TV coverage on the elections. When the Bundestag was sitting, parliamentarians preferably interacted with print media on Twitter. These changes indicate that political actors themselves engage in mediating politics in a hybrid sense, by episodically using Twitter to intervene and by referring to very different media (see Chadwick, 2013, p. 86).

Notably, the most addressed actors within the examined @reply networks were politicians, not citizens or journalists. @replies in this context can fulfill various functions. As our study has shown, they can communicate support, but criticism of other (opposing) political actors is also likely to take place in these conversations. By doing so, mechanisms of political competition and cooperation are both becoming more transparent to an extended network of followers. The opinionated or even expressive nature of these interactions might also provide an opportunity for the politicians' audiences to join the conversation.

Adi et al. (2014) characterized Twitter as an "anarchic platform" with highly individualized and instantaneous communication. Consequently, parties have difficulty imposing their will and communicating coherently. We found statistical differences on a party level concerning MdBs' general activity, their preferences for different Twitter operators, and their proportion of tweets discussing specific policies, but we cannot detect a clear party strategy. Most MdBs have communicated their parties' messages and participated in campaigning, but they still do so in a personal and individualized manner based on their interests and the anticipated interests of their intended audience.

The combination of network analysis and quantitative content analysis has proved fruitful to catch campaign dynamics in different phases of the electoral term. This systematic approach could also be applied in order to comparatively study whether these differences are mirrored across nations and different electoral systems to detect the reasons that drive these differing dynamics.

As with any study, certain limitations should be taken into account when assessing these empirical outcomes and conclusions. Our study is based on a comprehensive content analysis of MdB's tweets. We aimed to display all network interactions with other users who were made visible in their messages. Consequently, our design enabled us only to describe how members behave and with whom they decided to communicate. Further research could also explore how these interactions are shaped from the perspective of their communicative counterparts—for example, the reason why

Twitter users initiate or try to participate in conversations with politicians, and what affect this has.

So far, many comparable Twitter studies have focused on running candidates rather than on elected Members. We intended to compare political actors' Twitter habits and networks with a greater temporal distance to an election. Candidate-only studies do not make it possible to analyze parliamentary communication in this manner, but they do enable additional views on electoral outsiders and minor parties. Political communication research will need both perspectives if it is to understand Twitter's emerging role in the mediation of politics.

Acknowledgements

Declaration of Conflicting Interests

Funding

Notes

1.   http://www.bundestag.de
2.   https://pluragraph.de/organisations/deutscher-bundestag

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