Simon Hegelich, Morteza Shahrezaye

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Working Paper 2014/02

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The communication behavior of German MPs on Twitter: Reaching to the converted and attacking enemies

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Paper presented at the MPSA Conference 2014, Chicago, USA
Panel: 23 Turnout and Political Participation/Mass and Elite Strategic Behavior in Elections
Work in progress, comments are welcome.

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Abstract

What are the objectives of politicians when using Twitter? To study this question, we have collected all tweets of all German Members of Parliament (MPs) over a period of four month around the General Elections. We link our empirical work to the advocacy coalition framework. Instead of just proclaiming their point of view via Twitter to “the public”, politicians seem to be fully aware of the diverse possibilities Twitter offers to link information. We found that politicians use personalized connections like “friends-followers” connections, retweets and favorite tweets *within* their belief-coalition. In addition, politicians also communicate *from within* their belief-coalition in attacking opposite parties. Here, other elements of the Twitter architecture like “@” and “#” are used.

Introduction

Social media like Twitter is extensively used by politicians. Since the success of Obama’s online-campaign, the way politicians use microblogging services has been in the focus of diverse studies. There is a controversial on the impact microblogging like Twitter has on public opinion. Many studies stress the effect of Twitter should not be overrated because the interaction on Twitter is often limited to persons who already share the same beliefs (Himelboim/McCreery/Smith 2013). Other studies argue that cross-ideology perception is strongly increased via Twitter (Jisun/Chay/Gummadiz/Crowcroft 2011, 19). Most researchers agree that it is important to analyze *how* politicians utilize this new channel for their own purposes. A common thesis is that politicians are not very good in adapting the reciprocal

character of social media and therefore spoil a lot of the possible effect (Larsson/Moe 2012, 741).

This argument can be demonstrated by schematic communication structures. While politicians rely on a simple sender/receiver structure, where “the public” is addressed by the politician (Figure 1), social media relies on a network structure (Figure 2)

Figure 1: simple communication structure

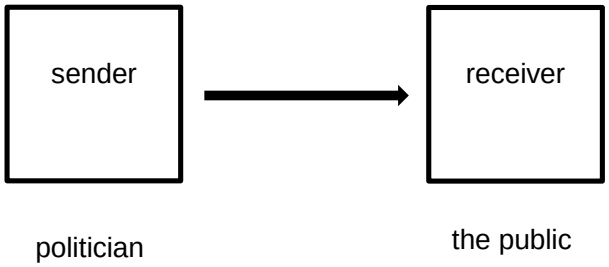
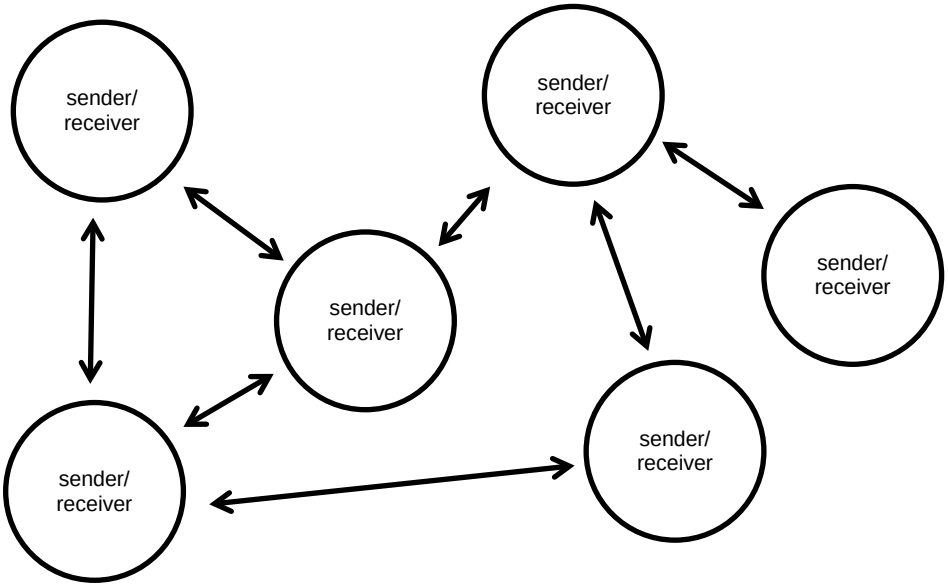


Figure 2: Network communication structure



While this network structure is commonly accepted to be a core element of social media, it reveals a problem that has not been addressed yet in the debates about politicians’ use of Twitter: If we accept this pattern, we do not have a distinguishable “public” anymore. Instead we have clusters that might or might not be related to each other. The question therefore

cannot be, what effect politicians have on “the public” when they use Twitter. Instead, we have to ask with whom politicians communicate and what kind of information they share. Or in other words, the sociability of politicians on Twitter has to be seen in the context of their specific communication structure.

To study this question, we have collected all tweets of all German Members of Parliament (MPs) over a period of four month around the General Elections in September 2013.

We link our empirical work to the advocacy coalition framework (ACF; see Sabatier/Weible 2007) for a theory guided approach. As will be explained, we expect politicians to communicate *within* and *from within* belief-based coalitions. We find clear indicators that politicians have adapted to the network structure of the medium, hence to different extends.

The paper is structured as follows: First, we give an overview of the “Twitter-phenomenon” and define the essential terms like “tweet”, “follower” etc. Second, we review the existing literature on politicians’ use of Twitter and highlight common problems in this research field. Third, we present our data and comment on the applied methods of data-collection. Fourth, we derive hypotheses from ACF how policy advocates will most likely behave on Twitter. Fifth, the data is analyzed with different measurements of sociability. Six, we discuss our findings and describe some blank spots in current studies of politicians’ use of Twitter.

Microblogging on Twitter

Microblogging as a type of online social networking is the practice of posting short pieces of contents in the form of text, pictures, links, or videos. It is prominent among people who frequently update contents on different topics. The most famous microblogging service is Twitter where messages no longer than 140 characters are allowed to post. Twitter has been launched on 13 July 2006.

Twitter has been used increasingly. In 2011, Twitter reported over 200 million registered users (Couper 2011, 904). Based on an official report on the first half of 2011 Twitter users posted in average 200 million tweets per day, while in January 2010 it was just 65 million, and in 2009 it was just 2 million. In 2011 “every day, the world [wrote] the equivalent of a 10 million-page book in tweets or 8,163 copies of Leo Tolstoy’s War and Peace. Reading this much text would take more than 31 years and stacking this many copies of War and Peace would reach the height of about 1,470 feet, nearly the ground-to-roof height of Taiwan’s Taipei 101, the second tallest building in the world”[1]. Today, it is estimated that it

[1] https://blog.Twitter.com/2011/200-million-tweets-day

has more than 940 million active accounts and over 8 million tweets per day.[2] This exponential growth raises the question if actual data is comparable to studies which have been made some years ago. Probably, the increased use of Twitter is not just a matter of quantity but also indicates a qualitative shift in user behavior.

A user on Twitter is a person with a unique user name who posts a tweet on her page. A posted content cannot be edited, and only the author can delete it. A user may decide to follow another person, but this relation is not necessarily two ways round. Assume for example *A* decides to follow *B*, then *B* is a friend of *A* and all the contents published by *B* will be received by *A*. In this situation *A* is *B*'s follower, but *B* is *A*'s friend. This establishes the possibility of an asymmetrical relationship on Twitter, although it is not possible in most of other social networking services like Facebook. A user could follow 50 others (have 50 friends) while being followed by 50 thousand users (50 thousand followers).

In addition to "friends" and "followers" Twitter provides three more ways of linking messages:

"Common practice of responding to a tweet has evolved into well-defined markup culture: RT stands for retweet, '@' followed by a user identifier address the user, and '#' followed by a word represents a hashtag" (Kwak/Lee/Park/Moon 2010, 591). Finally, a tweet can be marked as the favorite tweet of someone.

Taking these different forms of linkage together, clusters in the Twitter-network are tweets that are connected by *personal relations* – i.e. someone is following the tweets of specific user –, by *topic* – i.e. the same hashtag is used –, or by *conversation* – i.e. someone is directly addressing a specific user to deliver a defined content of information, or by *amplification* – i.e. someone is spreading the word of someone else as a retweet or marks a tweet as favorite.

This complex structure is poorly represented by simple sender/receiver models. E.g. a common used characterization of user interests developed in the early years of Twitter by Java et al. describes three types of users: information source, friends, and information seeker (Java/Song/Finin/Tseng 2007, 64). Here, reciprocity is reduced to the "friends"-category. While Java et al. clearly state that a "single user may have multiple intentions or may even serve different roles in different communities" (Java/Song/Finin/Tseng 2007, 64), most studies automatically expect politicians to be "information sources" only, as we will see in the following chapter.

[2] http://twopcharts.com/Twitteractivitymonitor

Twitter and Politics

The introduction of a new communication technology raises the question of its democratic impact. Referring to the internet use of Ralph Nader in the 2000 presidential elections, Papacharissi noted: "For independent candidates with limited funds and sparse coverage from the mainstream media, the internet presents a cheap, convenient, and speedy way of reaching out to potential voters" (Papacharissi 2002, 24).

But more than a decade later, the situation has changed fundamentally. Social media is not a one way street, like a normal web page used to be. So the question is to be raised to what extend politicians can adapt to the social character of this medium.

Especially the US presidential campaign of Barack Obama is seen as best practice example how to integrate Twitter, Facebook, MySpace, and other social media in political campaigns (Tumasjan/Sprenger/Sandner/Welpe 2010). Interestingly enough, Obama did not care about interaction in social media: "Barack Obama famously 'ignored' his followers in that his campaign did not reply to them [...], but it may well be that others would not get away with this so easily. As our results strongly suggest that voters appreciate attention in the form of being kept 'up to date', one might expect that interactivity is even more appreciated" (Spierings/Jacobs 2014, 231).

In a study of the Twitter use of Australian politicians, Grant argues in a similar way, but finds some hints that politicians already are aware about the importance of interactivity. "The whole point of social networking is not so much to send a message as to get one back. While it's always nice to tell the world what you think, if you do it on a social technology platform, you are inviting others to join the conversation. The whole idea is to listen, to talk, to debate, to agree and disagree, to create communities of influence and practice, to share" (Stewart-Weeks, cited after Grant/Moon/Grant 2010, 594).

But most studies see politicians in the role of senders to the public. "The three leaders [Obama, Cameron, and Netanyahu] seemingly use Twitter in two ways: the first is to inform the public about current issues such as economics, jobs and general information, while the second is to display themselves to the public through their international meetings, speeches, interviews, photos and videos" (Aharony 2012, 599).

Similar the study of Golbeck et al. analyzing the tweets of Members of Congress concludes: "Congresspeople are using Twitter primarily for outreach, not for improving transparency. Although there are certainly limits to what can be communicated in 140 characters, we found the content of the tweets does little to improve insight into the activities of Congress, improve

governmental transparency, or educate the readers about legislation or issues" (Golbeck/Grimes/Rogers 2010, 1621).

Larsson et al. argue that in Sweden less influential actors might be willing to participate stronger in Twitter-networks: "while major political parties and actors appear to have a hard time adapting to the reciprocal nature of @ and RT practices using Twitter, these means of conversation and networking appear to play some part in the use of minor political actors as identified in this study" (Larsson/Moe 2012, 741). But again, major political actors are thought to act primarily as “information source”.

The problem with these views is the following: It may be that politicians try to address “the public” via Twitter. But if the communication structure is not build for such a purpose, this idealistic point of view will always be a poor performance indicator for the behavior of politicians in social media.

A second problem that is controversial discussed in current literature is that politicians are most likely not reaching “the public” – even if they try – but only people who are already in a short ideological distance to the politicians’ beliefs. Himelboim et al. analyzed 5000 tweets during the 2010 US midterm elections and concluded: "Political content, nonetheless, was overall confined to like-minded clusters of users. On Twitter, individuals may interact with others who do not share their political ideology. But, at least for the issues analyzed for this study, this potential does not lead to meaningful cross-ideological interaction" (Himelboim/McCreery/Smith 2013, 195).

It is arguable if the small number of tweets might be enough to come to general conclusions. Besides that, other studies show that the opposite might be true: "indirect media exposure increases the diversity of political opinions seen by users: between 60-98% of the users who directly followed media sources with only a single political leaning (left, right, or center) are indirectly exposed to media sources with a different political leaning" (Jisun/Chay/Gummadiz/Crowcroft 2011, 19).

An et al. assume that the increased diversity might be caused by the different types of relationship Twitter offers its users: "social links in Twitter were less dichotomous in political views. One possible reason is that Twitter network encompasses several different relationships, from shared interest, to familial ties, friends, and acquaintances, so that political similarity doesn’t necessarily exist in all such ties" (Jisun/Chay/Gummadiz/Crowcroft 2011, 25).

Only few studies have linked the question of cross-ideological communication to the different type of network-connections provided by Twitter. Conover et al. found out that "the network

of political retweets exhibits a highly segregated partisan structure, with extremely limited connectivity between left- and right-leaning users. Surprisingly this is not the case for the user-to-user mention network, which is dominated by a single politically heterogeneous cluster of users in which ideologically-opposed individuals interact at a much higher rate compared to the network of retweets" (Conover/Ratkiewicz/Francisco/Goncalveset al. 2011, 89).

A third problem in current debates on politicians' use of Twitter is that only few studies try to link empirical findings with theoretic approaches of political communication. Notable exceptions are recent articles by Spierings/Jacobs 2014 and Lee 2013. On the other hand, theoretical approaches to understand new media politics (e.g. Conover/Ratkiewicz/Francisco/Goncalveset al. 2011; Auer 2011; Papacharissi 2002) do not take the special architecture of Twitter into account.

Linking Twitter to policy theory

The idea of politicians as senders and the public as receiver goes back to the foundations of political science as theory of the democratic state. "Public opinion in this discussion may simply be taken to mean those opinions held by private persons which governments find it prudent to heed" (Key 1968, 14). Key sees politicians as opinion leaders: "the critical element for the health of a democratic order consists in the beliefs, standards, and competence of those who constitute the influentials, the opinion-leaders, the political activists in the order" (Key 1968, 558). Policy studies always have been critical about simplifying politicians' communication as messages to the public (Bourdieu 1979; Bishop 2005; Chong/Druckman 2007; Herbst 1993). Looking at the policy process, politicians seem to do a lot more things than just trying to convince the public. "In the process of public policymaking, problems are conceptualized and brought to government for solution; governmental institutions formulate alternatives and select policy solutions; and those solutions get implemented, and revised" Sabatier 2007, 3). The advocacy coalition framework (ACF) offers a theoretical approach to policy analysis that has been successfully used in multiple policy analysis. "The ACF assumes that policy participants hold strong beliefs and are motivated to translate those beliefs into actual policy" (Sabatier/Weible 2007, 192). Because beliefs are the central element, friends and fiends are divided on this basis: "we are defining 'allies' as people with shared beliefs and attitudes on the policy issues under investigation, while 'opponents' are those with quite different believes of the same issues. [...] It assumes that respondents are able to ascertain the beliefs and attitudes of elites outside their group and then infer that those elites with differing beliefs and attitudes constitute their opponents" (Sabatier/Hunter/McLaughlin 1987, 457). In addition, the power of the opponents is

overestimated: "The amount of distortion (or 'devil shift') is correlated with the distance between one's beliefs and those of one's opponents. Thus opponents who have very different beliefs - e.g., on a conservatism scale - will overemphasize their adversaries' influence and negative aspects more than elites who are closer together" (Sabatier/Hunter/McLaughlin 1987, 451). Looking at the content of communication – according to the ACF – politicians are specialized on certain topics. "The ACF assumes that policymaking in modern societies is so complex, both substantively and legally, that participants must specialize if they are to have any hope of being influential" (Sabatier/Weible 2007, 192). So, a good deal of communication will be about the topics a politician is specialized in. Finally, coalitions in the ACF are not necessary identical with party membership (Sabatier/Weible 2007). Persons with similar believes might be in the same party but when it comes to coalitions in specific policy-subsystems, members from other parties might be closer to the belief-system of a politician.[3]

Taking these notions from ACF as starting point, the view on politicians‘ Twitter-communication is changing. Instead of assuming that politicians try to reach “the public” via Twitter, we expect that their communication is framed by their beliefs. On the one hand this means that politicians often are talking to the converted. They address people with shared beliefs because they are seeking support of their own coalition. On the other hand, politicians probably pay more attention to opponents than they should on purely rational grounds – simply because they overestimate their power.

Taking into account the described architecture of Twitter, we would expect that politicians are tweeting *within* their belief-coalition and are sharing information with friends and followers. Personal connections like the “friend-follower”-relation will be clustered by belief-coalitions. Same should be true for amplification methods like “favorite” and “retweet”. Content driven connections in hashtags will probably be clustered like policy-subsystems: different belief-coalitions participate in these clusters but with contradicting points of view. This kind of communication *from within* belief-coalitions could also take place in clusters created by directly addressing other users.

In parts, these theoretical arguments are confirmed by our data.

[3] "The ACF conceptualizes a three-tiered hierarchical structure. At the broadest level are deep core beliefs, which span most policy subsystems. Deep core beliefs involve very general normative and ontological assumptions about human nature, the relative priority of fundamental values such as liberty and equality, the relative priority of the welfare of different groups, the proper role of government vs. markets in general, and about who should participate in governmental decisionmaking” (Sabatier/Weible 2007, 194).

Data collection

We collected the contents posted by German Members of Parliament (MPs) over the period of 2 month before the General Election Day on 22th of September, 2013, until 17th of December 2013 (the day, the new Government was enacted). In this section, we will give a general overview of the data. In the next section we will discuss the differences in the MPs' use of Twitter within their belief-coalitions and from within their belief coalitions.

The German Parliament had 622 members pre-election belonging to 5 parties (see Table 1).

Table 1: Pre-election share of parliament members

Party	Pre−Election # (share)
CDU CSU	236 (38%)
SPD	146 (23%)
FDP	93 (15%)
Gruene	68 (11%)
Linke	76 (13%)

From all 622 members 264 had Twitter accounts. Given five different major parties in German Parliament below you find descriptive statistics about parliament members with Twitter accounts (see Table 2)

Table 2: Statistics on the parliament members

Party	Total # (Share in total # of party)	Women # (share)	Men # (share)
CDU CSU	68 (0.29)	9 (0.13)	59 (0.87)
SPD	54 (0.37)	23 (0.43)	31 (0.57)
FDP	47 (0.51)	11 (0.23)	36 (0.77)
Gruene	52 (0.76)	27 (0.52)	25 (0.48)
Linke	43 (0.57)	24 (0.56)	19 (0.44)
All Parties	264	94 (0.36)	170 (0.64)

We downloaded all the contents on the timeline using the functions of Twitter API 1.1. We implemented the functions using Wolfram Mathematica platform. From all the members we just took those at least have 6 tweets on their timeline, and then we filtered those contents which belong to period 22 July 2013 to 17 December 2013. That content includes all the retweets, all the mentions, and all the direct posts. The simplified version of the implemented code is provided at the end of the paper.

Politicians' use of Twitter

From this section on we are just taking the tweets of those MPs who have 6 or more tweets on their timeline.

In the Table 3 you can see the number of tweets of MPs which is clustered over the parties.

Table 3: Number of tweets on timeline of parliament members clustered by parties

Party	Tweets #	Members #	Tweets per Member #
CDU CSU	16 902	49	344.9
SPD	20 357	56	363.5
FDP	10 763	38	283.2
Gruene	12 757	41	311.1
Linke	8761	36	243.4

The data in Table 3 can be interpreted as the measurement of the absolute activity of the MPs of the different parties, without differentiating any communication structures. The more tweets each MP has on her timeline, the more she is engaged in public conversation within her belief coalition and beyond. As this table shows MPs of the social democrats party SPD have the highest number of tweets in terms of absolute and relative size.

Another interesting aspect is to check how the members of parties behaved post-election comparing to pre-election. Again, this information is not differentiated according to the different types of Twitter connections. What we see is that all parties increased their Twitter-frequency until the Election Day and then drastically reduced it.

Figure 3: Time frequency of Twitter use of CDU/CSU

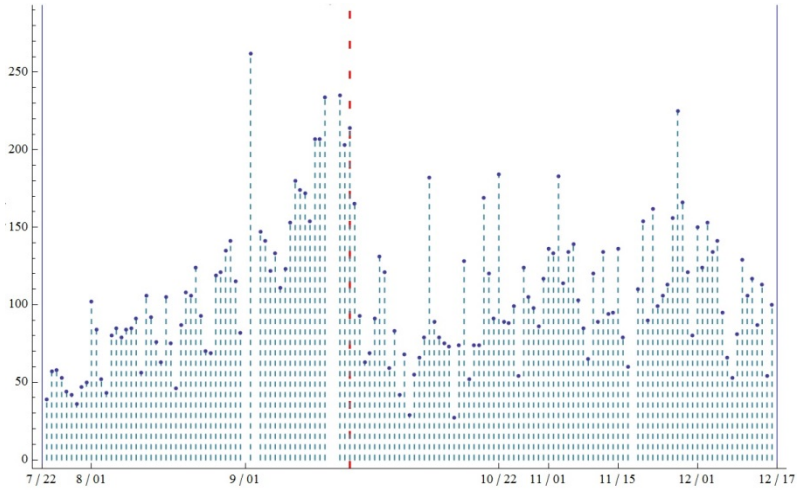


Figure 4: Time frequency of Twitter use of SPD

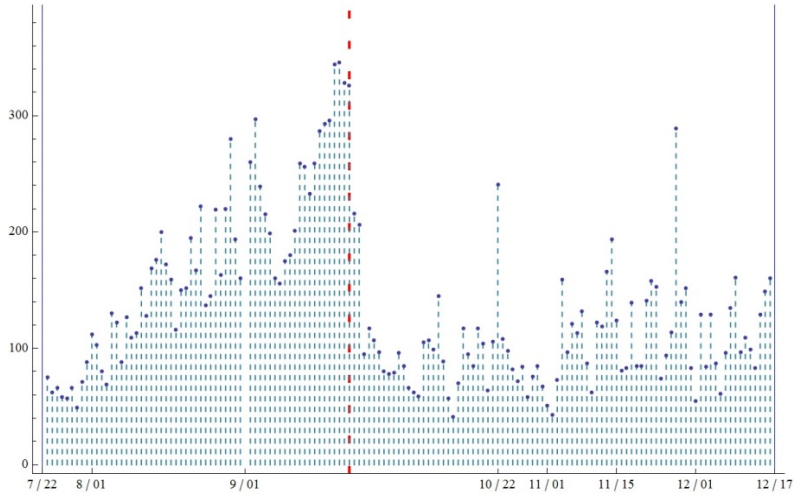


Figure 5: Time frequency of Twitter use of FDP

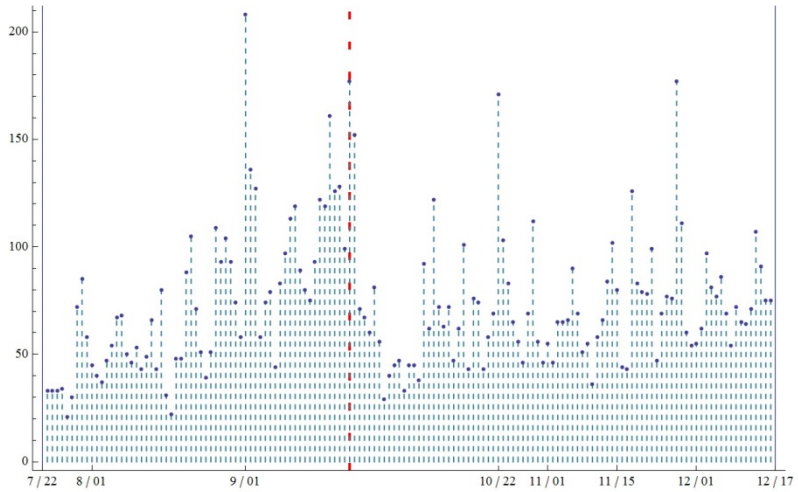


Figure 6: Time frequency of Twitter use of Gruene

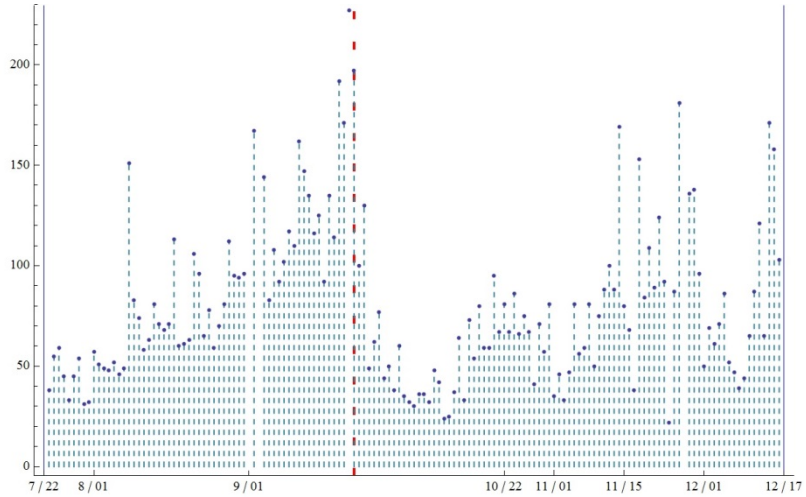
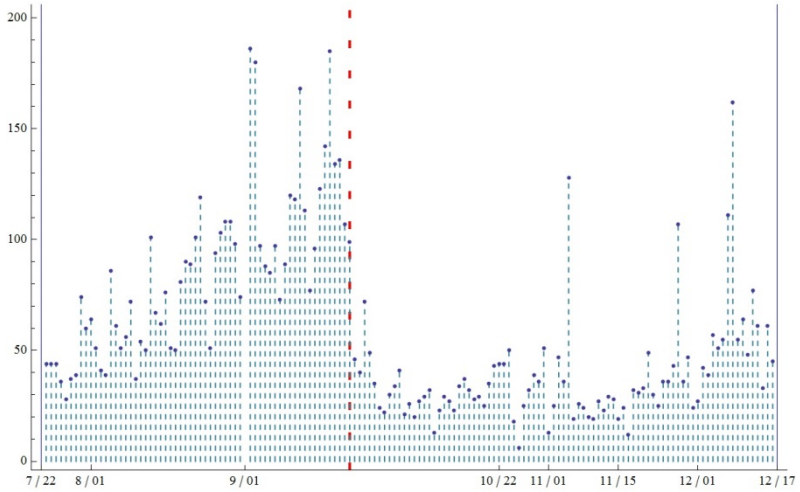


Figure 7: Time frequency of Twitter use of Linke



As Figure 7 shows the party Linke has the most dramatic decrease in its activity on Twitter after the election. One could argue that they are not generally active on Twitter but only used

it just as a tool for promoting their party pre-election. On the other hand, as a party not involved in the process of coalition finding, there might just be less information to share. CDU/CSU and FDP members seem to be more persistent on Twitter comparing to other parties.

Table 4 now shows the data on number of followers and friends of parliament members.

Table 4: Number of followers and friends

Party	Followers #	Followers per Member #	Friends #	Friends per Member #
CDU CSU	216639	4421.2	29061	593.082
SPD	225264	4022.57	22037	393.518
FDP	111668	2938.63	19463	512.184
Gruene	234523	5720.07	23459	572.171
Linke	133252	3701.44	38286	1063.5

The “friends-follower”-connections give us information about the size of the belief-coalitions different parties are reaching out to. Table 4 shows that the green party Gruene has the most number of followers in terms of both absolute size and relative size. It means more people are following the tweets on walls of Gruene MPs. The followers count is a measure of sociability directed from the belief-coalition to MPs. The other direction, the sociability directed from MPs to the belief-coalition should be measured by the number of friends the parliament members have. It is visible that the members of the left party Linke are more interested to the tweets directed from others to them than other parties. We can measure the ratio of sociability of MPs using the following equation:

$$Sociability\ Measurement\ of\ a\ Party\ (SoM) = \frac{Average\ Followers\ per\ Member\ of\ the\ Party}{Average\ Friends\ per\ Member\ of\ the\ Party}$$

One may interpret this measurement according to the categorization of Java et al. (Java/Song/Finin/Tseng 2007)

$$\begin{cases} SoM < 1 & \Rightarrow \quad The\ MPs\ of\ the\ party\ tend\ to\ be\ more\ information\ seekers \\ SoM = 1 & \Rightarrow \quad The\ MPs\ of\ the\ party\ tend\ to\ be\ balanced\ in\ giving\ and\ recieving\ information \\ SoM > 1 & \Rightarrow \quad The\ MPs\ of\ the\ party\ tend\ to\ be\ more\ information\ providers \end{cases}$$

Table 5 shows the SoM value for different parties.

Table 5: SoM values

Party	SoM
CDU CSU	7.45463
SPD	10.2221
FDP	5.73745
Gruene	9.99714
Linke	3.48044

Table 5 shows SPD MPs are more likely to be interested to be information providers (are relatively more sociable toward other people and less follow others), while the left party Linke are more likely to be information seekers (they are relatively less sociable towards other people and do follow others more frequently). This means that MPs of the Linke are more interested to get information from society comparing to other parties.

The other measurement Twitter offers that gives us hints about the belief-coalitions is the times a tweet (retweet, direct mention, or direct tweet) has been retweeted or favored in total. The more retweets and favorite tweets a party has on its timeline, the stronger is the cluster of their belief-coalition. Table 6 provides us this information on our case.

Table 6: Number of retweets and favorite tweets

Party	Tweets #	Members #	Share of Geo Enabled Members	Retweeted #	Retweeted # per Tweet	Favorited #	Favorited # per Tweet
CDU CSU	16 902	49	0.24	423 682	25.1	16 056	0.95
SPD	20 357	56	0.32	427 972	21.	15 143	0.74
FDP	10 763	38	0.18	70 534	6.6	15 050	1.4
Gruene	12 757	41	0.29	383 785	30.1	15 192	1.19
Linke	8761	36	0.31	47 423	5.4	4745	0.54

As Table 6 shows the content on the timeline of party Gruene has been retweeted the most in average. The liberal party FDP has only 6.6 retweets per tweet. Within their belief-coalition, the FDP therefore has a lower amplification effect than the Gruene. Interestingly, FDP has the highest average of favorite tweets. This might be a hint that the quality of the tweets is seen as very high within the belief-coalition of the FDP MPs.[4]

[4] It is interesting to compare these results with those Grant found for Australia: "Some small differences were found across party lines. Australian Labor Party (ALP) and Coalition tweeters were largely indistinguishable in behaviour, yet Greens politicians were more likely produce retweets than the others.[...] However, many of these retweets appear to be of other Greens politicians (24.8% of their retweets, compared to 9.6% for the ALP and 13.3% for the Coalition), suggesting (at least partly) an effort to magnify their impact on Twitter rather than any clear difference in willingness to engage with non-politicians on Twitter. More significantly, Greens politicians follow more people than their ALP or Coalition counterparts. [...] Here Greens politicians follow a median of 224 people, compared with 23.5 for the ALP and 40.5 for the Coalition. The difference between following and follower numbers was smaller for Greens politicians than for either the ALP or the Coalition" (Grant/Moon/Grant 2010, 587).

We now move to the conversational type of network-connections created by direct mentioning. The more a member is mentioned, the more Twitter users are directing attention to her. A direct mention to user *B* is *@B*. The number of mentions by party is shown in Table 7.

Table 7: Number of direct mentions

Party	Direct Mentions # (average per member of party)
CDU CSU	971 (20)
SPD	768 (14)
FDP	202 (5)
Gruene	425 (10)
Linke	183 (5)

As table 7 shows the members of the conservative CDU/CSU are more in the center of attention, while both FDP and Linke are less frequently mentioned. But of course, they have less MPs as well. We now can try to differentiate between direct mentioning within and beyond belief coalitions. To measure this we counted the total number of times members of each party have directly mentioned the members of the other parties.

Table 8: Cross-party direct mentions

	CDU CSU	SPD	FDP	Gruene	Linke	Total
CDU CSU	3388	198	31	190	25	3832
SPD	220	2270	24	283	117	2914
FDP	51	18	952	34	1	1056
Gruene	112	170	18	1168	13	1481
Linke	57	55	6	47	592	757
Total	3828	2711	1031	1722	748	10 040

Table 8 shows that MPs from the SPD have directly mentioned other MPs of their own party 2270 times, while they have mentioned FDP MPs 24 times. The Gruene is the only party that is more often called directly (1722 times) than the total number of their own direct calls (1481). Table 8 supports our theory: Most conversation is between members of the same party. The bigger the ideological distance, the fewer are the “cross-party direct mentions”. The parties with probably the most different beliefs are FDP and Linke. Linke is called just once by the FDP and the FDP is called only six times out of 757 direct mentions by the Linke.

But from our theoretical approach, we would expect the parties to talk over each other quite often in a negative way, because of the devil’s shift. To demonstrate this effect, Table 9 shows how often the name of another party was mentioned in the tweets. Here, the picture looks quite different, although we cannot tell by the numbers, if e.g. the FDP is talking

positive or negative about the Linke. Nevertheless, there is a remarkable conversation-type network between the parties.

Table 9: Number of times members of each party have used the name of another party in their content

	CDU CSU	SPD	FDP	Gruene	Linke	Total
CDU CSU	16	1	2	31	0	50
SPD	52	10	0	0	0	62
FDP	9	11	7	5	15	47
Gruene	0	7	2	1	0	10
Linke	0	0	7	7	0	14
Total	77	29	18	44	15	183

To get a better impression of the content of the tweets and the content-based clusters, we use word clouds. We simply excluded every special character from the texts (those like @, #, &, :, …) and then transformed the texts to lower cases. Finally we excluded a list of stop words. In addition, we divided the timespan in pre- and post-election periods. The word clouds then represent the most frequent words within the tweets of each party.

	Pre-Election	Post-Election	Whole Period
CDU CSU			
SPD			
FDP			
Gruene			
Linke			
All Parties			

Most remarkable, for all parties, mentions of the other parties and their candidates are among the most frequently used words. CDU/CSU is tweeting about the Gruene and their members Bärbel Höhn and Katrin Göring-Eckardt. The SPD is tweeting about Chancellor Merkel and CDU member Peter Altmaier. The liberals (FDP) mention in their tweets the left party Linke and their candidate Gregor Gysi. The green party Gruene is tweeting about SPD candidate Peer Steinbrück. In addition the words “schwarz” (black) and “gelb” (yellow) are among the most frequent words of the Gruene and this is the “color-code” for a coalition of CDU/CSU and FDP. The Linke focuses its attention on the Gruene as well as on the FDP candidates Daniel Bahr and Rainer Brüderle.

In the post-election period, the most frequently used term is “groko”. This is a short form for “grand coalition” (Große Koalition). Besides that, we find a lot of “thanks” (danke) and “congratulations” (Glückwunsch) showing a high degree of interaction.

Conclusions

We found that politicians in Germany use Twitter in multiple ways. Instead of just proclaiming their point of view via Twitter to “the public”, politicians seem to be fully aware of the diverse possibilities Twitter offers to link information. We found that politicians use personalized connections like “friends-followers” connections, retweets and favorite tweets *within* their belief-coalition. With this kind of communication politicians seem to reach out to the converted: They use twitter as a medium to spread information about their campaigns within a group with low ideological distance. But in addition to this, politicians also communicate *from within* their belief-coalition in attacking opposite parties. Here, other elements of the Twitter architecture like “@” and “#” are used.

These findings are – in our opinion – highly relevant for the study of politics and Twitter. First, studies should consider all different kinds of connections that appear in Twitter, because retweets, hashtags, direct mentions and following seem to have different objectives and result in unequal clusters. But most studies tend to draw generalized conclusions out of a small set of categories like number of tweets or number of followers (Aharony 2012) or mentions and retweets (Conover/Ratkiewicz/Francisco/Goncalveset al. 2011). These studies are very helpful to understand the different use of these communication structures (Romero/Meeder/Kleinberg 2011). But without a general theory of politicians’ communication behavior, the danger of misleading generalizations is very high. This is the second point, where we hope to contribute to the existing literature: As discussed, many studies implicitly assume a simple sender/receiver communication structure, which is not adequate for social media. We found that politicians’ Twitter communication can be linked to ACF. In our opinion, it makes a lot of sense to see politicians as advocates in belief-coalitions with different

objectives in their communication. The data we have presented seems to support this view. But of course, a lot of research had to be done in this direction in order to proof this assumption. We did not formulate testable hypothesis nor did we apply a rigor deduction. The ideas we took from ACF remain on a very basic level and important aspects – e. g. that coalitions do not necessarily fit to party-membership – were neglected. A good way to improve the approach presented here would be to analyze the tweets on a specific policy issue. This could lead to a better understanding of policy subsystems.

Finally, there are many aspects in studies from other countries that should be compared with the results presented here. For example, the study of Grant et al. (Grant/Moon/Grant 2010) presents similar results about the green party and the labor party. Right now, we can only rely on single case studies for Germany (Jungherr/Jürgens/Schoen 2012; Tumasjan/Sprenger/Sandner/Welpe 2010), Netherlands (Spierings/Jacobs 2014), South Korea (Yoon/Park 2014), USA (Golbeck/Grimes/Rogers 2010), or Sweden (Larsson/Moe 2012). Comparative analyzes would have to face several problems: Text-mining tools often have difficulties in dealing with multiple languages (Ledolter 2013). Taking into account the exponential growth of Twitter, we also have to raise the question, how comparable Twitter data-sets collected at different times really are.

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