To Whom Do Politicians Talk and Listen?

Mapping Swiss Politicians' Public Sphere on Twitter

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Abstract

Politicians use social media platforms such as Twitter to connect with the public. However, it remains largely unknown who constitutes the public sphere to whom politicians actually connect, talk, and listen. Focusing on the Twitter network of all Swiss MPs, I identified 129,063 Twitter users with whom politicians connected (i.e., their follower–followee network) or with whom they interacted (e.g., [were] replied to or retweeted). I qualitatively analyzed top connected, talking, and listening MPs, and conducted a semi-automated content analysis of the Twitter users to classify them (N = 70.589). Politicians' audience consists primarily of ordinary citizens, who also react most often to the politicians' messages. However, politicians listen more often to actors close to politics and the media than to ordinary citizens. Thus, politicians navigate between engaging with everyone without losing control over the communication situation and address key multipliers such journalist to get their messages out.

Keywords: public sphere, Twitter, semi-automated content analysis, Switzerland, popularity cues, reactions

Introduction

Politicians around the world have adopted social media platforms such as Twitter to connect and interact with the public (R. Davis, Holtz-Bacha, & Just, 2017; Spierings, Jacobs, & Linders, 2018). While cyber-optimists hoped that these platforms would enable more people to make their voices heard

in political debates, and cyber-pessimists countered that various digital divides might hinder this (for an overview, see Schäfer, 2015), it remains largely unknown *whom* politicians actually encounter on Twitter. Especially because the networks' characteristics influence the extent to which actors are visible to each other, it might show that politicians connect only with other politicians, that they broadcast their messages primarily to ordinary citizens, and that they reply, for the most part, to journalists on Twitter.

Overall, studies have seldom focused on *who* connects or reacts to politicians. To date, scholars have analyzed friends or followers of politicians or focusing on specific reactions such as to whom politicians reply (Ausserhofer & Maireder, 2013; Graham, Broersma, Hazelhoff, & van 't Haar, 2013; Rauchfleisch & Metag, 2016, 2020; Spierings et al., 2018; Vaccari & Valeriani, 2015). I argue that solely a comprehensive analysis of the myriad of groups of actors (e.g., executive politicians, scientists, social organizations, and ordinary citizens), stratified by those to whom politicians connect (i.e., follow and are being followed), talk (i.e., likes, mentions, replies, and retweets from politicians), and listen to (i.e., likes, mentions, replies, and retweets from another user), allows for an assessment of whether the public sphere of Twitter enables a variety of actors to have a say and be heard. This is why I ask, *To whom do politicians talk and listen?*

This case study of Swiss politicians on Twitter enhances the understanding of the networked public sphere in two ways. First, by analyzing not only replies but also all other reactions, such as "likes" and "retweets," it sets the threshold low with regard to taking part in political debates. It thereby also includes reactions which were more often used than others (e.g., retweets compared to replies) and users who invest less in political debates (e.g., with a like) than others (e.g., with a reply), which includes more voices than other approaches. Second, this analysis focuses on both sides of the politicians' Twittersphere: On the one hand, politicians are being followed and reacted to, which indicates with whom they talk and who actively spreads their messages (Vaccari & Valeriani, 2015). On the other hand, politicians follow and react to others, which points to those whom they amplify and listen to (Benkler, Roberts, Faris, Solow-Niederman, & Etling, 2015; Dobson, 2012; Spierings et al., 2018).

Twitter and the Networked Public Sphere

Public sphere theories focus on spaces in which different actors with different arguments can discuss politically relevant issues. In all three dominant traditions within the public sphere theories (liberal, discursive, and constructionist), the question of which actors participate in public discourses

plays a crucial role (Ferree, Gamson, Gerhards, & Rucht, 2002). However, the traditions differ when it comes to their normative assumptions regarding who should participate. In the liberal tradition, the public sphere should reflect and include the varied ideological positions and voices according to their proportionalities in society. In the deliberative tradition, all people (or at least their representatives) who are affected by political decisions should participate; these include actors from the political periphery, such as ordinary citizens, and not only those from the political center, such as politicians. In the constructionist's tradition, all citizens, especially marginalized groups, should be empowered to participate (Ferree et al., 2002; Wessler, 2008).

The advent of the World Wide Web and later social media platforms brought into the limelight the question of who is participating in the networked public sphere. Scholars have attempted to predict whether these platforms have offered more actors opportunities to have a say and be heard (for an overview, see Schäfer, 2015). On the one hand, these platforms have been perceived as a "magic elixir" (Stromer-Galley, 2000, p. 113) that allows citizens from the political periphery to engage with politicians (e.g., Rheingold, 2000). On the other hand, scholars have stressed the possible colonization of the Web and social media platforms by capital (Dahlberg, 1998; van Dijck, 2013): Although these platforms allow users to connect, talk, and listen to politicians, the visibility of actors might differ significantly between those who have monetary resources and those who do not (e.g., Keller & Kleinen-von Königslöw, 2018b; Williams & Gulati, 2013).

While each platform plays its role in connecting people in the networked public sphere, Twitter has become a crucial platform for politics around the globe (R. Davis et al., 2017). Its four key attributes may also help bring actors from the political center closer together with actors from the political periphery (Jacobs & Spierings, 2019; Klinger & Svensson, 2015; Spierings et al., 2018): 1) Twitter allows users to connect and interact with each other without requiring them to accept connections or interactions before, that is, it allows actors from the political periphery to connect and interact with the political center; 2) supporting the first attribute, Twitter is free and easy to use allowing users with minimum skills and different backgrounds to engage in political discussions, also enabling to draw actors from the political center into other discussions; 3) Twitter revolves around interactions such as mentions which allows actors from the political periphery to invite and notify actors from the political center to debate with them; 4) Twitter's algorithms amplify tweets that are more likely to trigger reactions from others which also leads to tweets that are spread beyond

actors that follow each other, may even go viral, and may lead to publicity in mainstream news media.

Despite the potential, Twitter's algorithm and politicians' behavior may hinder these vital engagements between the political center and periphery. Because Twitter is open for any connection and interaction between two users, the vast number of potential tweets any user can find on its timeline is algorithmically moderated. That is, Twitter shows only those tweets to a user that its algorithms determined to be most likely for him/her to interact with (Twitter, 2017). One the one hand, this leads to a heavily skewed or even a power-law distribution of attention for few users and few tweets because those very highly engaged actors and tweets reach most other users (Nielsen & Vaccari, 2013). On the other hand, this also leads to a context collapse (Marwick & boyd, 2011): A politician may target a specific audience such as in an effort to mobilize citizens but may reach primarily other politicians because politicians were those who interacted most with the sender. But not only platform's algorithms may hinder these connections, politician's and other users have reasons to avoid to engage with the political periphery: They fear to lose control over the communication situation, their communication may lead to negative media attention, and they may not have the resources to reply to everyone on these platforms (Kalsnes, 2016; Stromer-Galley, 2000).

Thus, Twitter's key attributes would allow to bring the political periphery closer to the political center and – despite technological and human hurdles – may level the playing field in the networked public sphere. However, it remains an empirical question whether a national Twittersphere empowers ordinary citizens to have a say and be heard.

To Whom Do Politicians Talk and Listen on Twitter?

Due to Twitter's character limit for tweets and focus on news, the microblogging platform was adopted in particular by journalists, politicians, and other rather "elite" accounts (Ausserhofer & Maireder, 2013; Metag & Rauchfleisch, 2017; Rauchfleisch & Metag, 2016). However, the platform can also serve as an expansion of the elite: parliamentary backbenchers, bloggers, comedians, and independent Twitter users dominated the group of most retweeted Twitter users during a routine three-week period in Norway (Rogstad, 2016). Rauchfleisch and Metag (2016) focused on replies in the Swiss political Twittersphere and found that Swiss MPs received by far the most number of replies per actor, although local politicians led in the number of received replies overall, followed by citizens, and journalists.

Spierings et al. (2018) showed that primarily ordinary citizens addressed Dutch MPs during a routine phase in 2016 (50% of all incoming replies), and yet, MPs replied more often to other political actors (26%) and people representing civil society and business interests (24%) than to ordinary citizens (23%), although the differences are minimal. Graham et al. (2013) found a different picture for the UK's MPs during the 2010 general election campaign: Of the total number of replies by UK's MPs, 59% were directed to the public, accounting for the largest share, followed by other politicians (16%), and journalists (10%). Ausserhofer and Maireder (2013) showed that the political Twittersphere in Austria is dominated by politicians and journalists; citizens, conversely, played a minor role in the discourses. Vaccari and Valeriani (2015) analyzed the followers of the Italian party leaders during the 2013 general election and showed that most of their top followers were individuals (71%), male (78%), and Italian (62%). A third of those followers were part of the sports, show business, popular culture, or arts industry; 22% belonged to the media sector; and 3% were comedians (Vaccari & Valeriani, 2015).

While these studies focused on the followers or friends of or replies by or to politicians, they shed light on only a specific part of the politicians' Twittersphere. The number of followers represents the potential audience but neglects all of those who react to politicians' tweets yet are not followers and may belong to the secondary audience. The politicians' friends and replies reflect the users to whom they have listened but ignore those whose tweets they have liked, retweeted, and mentioned. Thus, all four kinds of reactions need to be taken into account to assess the networked public sphere of politicians: When users *reply* and, thus, interact with someone; *retweet* a tweet to redistribute it; *mention* someone, which notifies and links to the mentioned user; and *like* a tweet to show support for or at least acknowledge a message (see also Larsson, 2017). These connections and reactions are used bidirectionally. To assess the politicians' Twittersphere, both the *incoming* connections (followers) and reactions (e.g., if a user retweets a politician's tweet) and *outgoing* connections (friends) and reactions (e.g., if a politician retweets a user's tweet) need to be analyzed. This framework allows to explore the general activity revolving around politicians in terms of connections and reactions and to ask to whom politicians talk and listen in the Twittersphere.

Because the Twittersphere is a network, connections and reactions are usually highly skewed so that very few receive most and most receive very few (for an overview, see Clauset, Shalizi, & Newman, 2009). The same

skewed distribution was found for attention to US politicians' websites, as well as their Facebook, Twitter, and YouTube accounts, in terms of number of followers (Nielsen & Vaccari, 2013) and reactions to Swiss politicians on Facebook and Twitter (Keller & Kleinen-von Königslöw, 2018a). It remains unknown, however, which accounts end up on top of this distribution. Results on this topic remain mixed and dependent on the country. For example, populist MPs befriend fewer accounts but retweet them more often in the Netherlands (Spierings et al., 2018) and Larsson and Moe (2014) found that the Twittersphere provides an opening for outsiders to grasp the attention during Norwegian elections. I therefore explore first *What do those Swiss MPs who are most connected and interacted with on Twitter have in common?* (*RQ1*)

Incoming connections and reactions indicate who possibly receives the politician's tweets and actively spreads his or her messages. They reflect the (active) audience of a politician and – in a broad sense – stand for the users to whom he or she talks (Vaccari & Valeriani, 2016). Due to the platform's logic (Klinger & Svensson, 2015), it is in the interest of a politician to attract a large number of followers who will actively spread his or her messages to their respective networks (Keller & Kleinen-von Königslöw, 2018a). The higher the number of reactions to a tweet, the larger the audience it reaches (Karlsen & Enjolras, 2016; Klinger & Svensson, 2015). However, politicians might also benefit if highly influential accounts follow them and spread the politicians' messages to their networks. For example, the "top followers" of the Italian party leaders are celebrities who, if they retweeted a politician's tweet, might reach ordinary citizens who might otherwise not engage with politics (Vaccari & Valeriani, 2015). Whether politicians' tweets reach a large audience or highly influential accounts, mere exposure to them has been shown to result in a more positive attitude toward the politicians and leads to a heightened feeling of social presence, in turn causing a favorable impression and stronger voting intentions (Kobayashi & Ichifuji, 2015; Lee & Jang, 2013; Lee & Shin, 2014). It remains unknown, however, whether Swiss politicians reach potential voters – as opposed to only other political actors, such as party accounts – and who spreads the politicians' tweets. Consequently, I ask: *To whom do Swiss politicians talk on Twitter?* (*RQ2*)

Outgoing connections and reactions indicate to whom politicians listen. Listening is a concept that is seldom under investigation, although its role in increasing legitimacy and improving understanding between politicians and ordinary citizens is as important as that of talking (Dobson, 2012). Crawford (2009) differentiates between background listening, similar to tuning in on the radio, reciprocal listening, i.e. hearing and responding, and

delegated listening, that is, paying others to listen. Translated to politicians' use of Twitter, MPs befriend others for background listening and if they also respond, they also engage in reciprocal listening. Delegated listening means that they pay someone for background and reciprocal listening. Background listening serves MPs as a proxy for public opinion (Jungherr, 2016). However, they neither follow a representative sample of the Swiss population, which Twitter could not provide (Hargittai, 2018), nor does a random sample of tweets end up in their news feed. They might specifically select whom they follow. Thus, politicians see very different news feeds on Twitter, depending on whom they follow, to which tweets their networks react, and finally, which tweets Twitter's algorithm selects for them. They also react selectively to tweets (i.e. reciprocal listening) and, thus, amplify them. If they retweet a lesser-known actor, he or she benefits from the followership of the politician. For example, during the SOPA–PIPA debate, a variety of individuals on the periphery played a crucial role when they were amplified by more visible actors (Benkler et al., 2015). Whereas MPs in the Netherlands listened primarily to actors close to the political system, UK's MPs replied most often to the public (Graham et al., 2013; Spierings et al., 2018). Thus, I ask, *To whom do Swiss politicians listen on Twitter?* (*RQ3*)

The Case of Switzerland

Switzerland is a comparable case regarding Internet penetration and the role of Twitter in political communication: In general, nine out of ten members of the Swiss population (8.42 million) use the Internet. A total of 16% of the Swiss population use Twitter, and 8% publish tweets actively (Latzer, Büchi, Festic, & Just, 2017). Twitter's role in Switzerland, as in other countries, is characterized by its focus on the news (Levy, Newman, Fletcher, Kalogeropoulos, & Nielsen, 2018; Metag & Rauchfleisch, 2017).

While Switzerland's political system is a multiparty system with a two-chamber parliament and a government coalition like in other Western countries, three principles make the Swiss case stand out: the consensus principle, the militia system, and direct democracy (Kriesi, 2008; Rauchfleisch & Metag, 2016). First, parties from opposite sides work according to the consensus principle: For example, the Federal Council serves as the executive head of the government and consists of seven people, with members representing the left, center, and right parties. Second, Swiss politicians work in a militia system. Traditionally, politicians such as MPs worked on a volunteer basis, which meant that politics was their part-time job. Although this still holds true in principle, most MPs have become professional politicians. However, politicians are still expected to be part of the industry

and to keep close to the people. Another outcome of the militia system is that Swiss parties and the MPs themselves are less professionalized than in other countries. Therefore, most politicians have no professional support for running their social media accounts – and makes delegated listening rare. This makes the Swiss case especially interesting because MPs run their social media accounts by themselves, at least in routine periods. Third, the national parliament constitutes itself four times per year for three weeks in "sessions" to meet, debate, vote, and hand in parliamentary submissions. Because Switzerland is a direct democracy, Swiss citizens are called to the ballot box to vote for or against a referendum three to four times per year, which is why MPs try to stay close to the people.

Methods

The starting point of the study built the 156 (63%) Twitter accounts among the total 246 members of the Swiss parliament on the first day of the fall session (September 10th–28th, 2018). I downloaded all the followers and friends of the MPs (i.e., the users whom the MPs follow), including their profile descriptions, during the last two weeks of September (Kearney, 2018). To ascertain who MPs reply to, retweet, mention, and like, all the timelines and liked tweets of each MP were downloaded, including the users' profile descriptions. To determine who mentioned, replied to, or retweeted an MP, all tweets containing a political actor's Twitter handle were downloaded via the search API, which also included the users' Twitter profile descriptions. Due to Twitter's API restriction, it was impossible to automatically download information on who liked an MP's tweet. Because of a few accounts' privacy settings and the fact that some accounts were already removed from Twitter, the profile descriptions of 73 accounts (8 accounts to which an MP replied, 17 to which an MP retweeted, and 48 to which an MP mentioned) could not be retrieved. In total, 129,063 unique accounts were identified, and their account information downloaded. Based on this data, I will explore who of the Swiss MPs are those with most connections (i.e. followers and friends) and reactions (i.e. incoming and outgoing replies, retweets, mentions, and likes) and what they have in common (RQ1).

Classification Categories

An MP's public sphere on Twitter consists of a variety of actors (Graham et al., 2013; Rauchfleisch & Metag, 2016; Spierings et al., 2018; Vaccari & Valeriani, 2015). From an ideal–typical point of view, these actors can be categorized

into four communicative stages in regard to politics: assert, aggregate, or articulate political interests – or report about politics (Jarren & Donges, 2011).

The first group of actors asserts political interests at the local, regional, or national level. These actors are executive politicians, such as members of the federal council, mayors, or ministers. The second group consists of political parties and (non-MP) elected politicians. These actors have close ties to the political system and executive politicians. However, their main goal is to aggregate the political interests of their electorates. The third group comprises individuals and organizations that articulate their interests. These are NPOs, NGOs, or social movements (social organizations); profit-oriented businesses (private industry); the representatives of such organizations (e.g., leaders) or businesses (e.g., CEOs) or board members, scientists (e.g., professors, researchers, and universities), celebrities (e.g., comedians or sports personalities), and ordinary citizens (e.g., self-described citizens). The fourth group is composed of media organizations and journalists, who function as intermediates and commentators. These are bloggers, commentators, columnists, editors, and other people who are affiliated with news companies (Jarren & Donges, 2011).

Two actor-specific actors invade political discussions: spam accounts that try to sell or promote their products using trending hashtags (Ausserhofer & Maireder, 2013) and bot-like accounts that behave similar as automated programs, so-called social bots (C. A. Davis, Varol, Ferrara, Flammini, & Menczer, 2016).

Semi-Automated Twitter Account Analysis

The semi-automated content analysis of Twitter profiles started with an automated, dictionary-based analysis. The unit of analysis was each user's profile description and URL. Following the approach and keyword lists of Spierings et al. (2018), I first generated lists of keywords and account handles for each category: The list of MPs was generated manually by searching for each MP on Twitter. The keyword lists of ministers and executive members of parliament (*executive politicians*), *political parties*, former and foreign politicians (*non-MP and other politicians*), and Swiss and other European media outlets stemmed from own previous research. I used the Twitter search to identify individual journalists who were affiliated with news companies, and I added them to the list of *journalists.* Lists containing various nonprofit and nongovernmental organizations, as well as social movements and their leaders (*social organizations*), profit-oriented businesses and their leaders (*private industry*), and *celebrity and satire* accounts were each manually created by searching accounts via the Twitter

search and political hashtags. A list of keywords indicating the private use of Twitter, such as "citizen," "father," or "mother," was used to identify ordinary citizens (and other individuals without a legal status of being Swiss citizens) with no indication to be connected to any other category mentioned above. The list of spam and advertisement keywords was based on previous research. No keyword list of bot-like accounts was created because I relied on Botometer to test all 129,063 accounts (C. A. Davis et al., 2016; Keller & Klinger, 2019) (see Appendix A).

The keyword lists were used to identify accounts by their public Twitter descriptions and Twitter screen names. Of the 129,063 accounts, only 70,589 had at least a description or a URL by which they could be identified. The other 58,474 were omitted from the analysis because they did not provide a hard criterion to determine who or what this account represents, and 98 percent of those accounts were inactive. Although this decision leads to a lot of missings, it increases the analysis' accuracy. After running the identification process, (a sample of) all accounts belonging to each category were checked manually. After several runs neither improved the number nor the correct classification, the automated analysis ended with 51% (36,243 accounts) identified (see Appendix B).

A second experienced coder was trained with random sample of 90 accounts containing at least 10 accounts from each category (most accounts fell into multiple categories) to test the reliability and validity of the automated analysis and conduct the quantitative content analysis for the non-automatically classified accounts.

The intercoder reliability test and the reliability test between the automated analysis and the second coder showed satisfactory agreement (at least a Krippendorff's alpha value above 0.79 for all categories based on a sample of each 90 accounts). To test the validity of the automated analysis, the second coder double-checked the classification of each account in a sample of 180 accounts, including at least 20 accounts from each category. Accuracy (>0.7), precision (>0.7), recall (>.71), and F1 score (>0.82) showed good results for each of the category except the category of non-MP politicians which reached a good precision (1.0) but only accuracy and recall of 0.5, leading to a F1 score of 0.67, which is satisfying given the purpose and difficulties of automated classification of Twitter descriptions (see Appendix, Table B2). However, given the high number of false negatives in this category, the number of non-MP politicians may be underestimated in the automated analysis.

The automated classification may include biases because the keywords were based on the author's and other researchers' lists and not all users

describe themselves using the same words. Therefore, a stratified random sample of 150 accounts per category (e.g., replies and retweets, total N = 1,287 accounts) was drawn from all the accounts that could not be classified automatically. The author and the second coder conducted the quantitative content analysis (see intercoder reliability tests mentioned above). Each account's Twitter screen name, description, and profile URL (if necessary, its linked content) were analyzed based on the same categories as were used for the automated analysis. Following Spierings et al. (2018), the results were extrapolated to the unclassified accounts, and the classification was used hierarchically (see Appendix C).

Results

The average Swiss MP had a followership of 3,501 followers and befriended 591 other Twitter users (see Table 1 and 2). During the three-week period, such a MP received on average 234 incoming tweets from 155 unique users (more than two thirds from their first-degree network) and reacted with 78 outgoing tweets to 88 unique users (more than 84% to their first-degree network). However, these averages represent rather outlier because the number of followers, friends, and tweets are heavily skewed resembling a power-law distribution (see Appendix D for discussion about power-law distribution). That is, only few MPs have most connections, talked, and listened to most others while most MPs connected, talked, and listened with comparably few others.

Who are the Swiss MPs on with most followers and friends? Together, the three MPs with the most followers (Cédric Wermuth [SP]: 46,004 followers, Natalie Rickli [SVP]: 45,317, and Christian Levrat [SP] 33,802) have 23% of all followers, which is two to three times as many followers as the subsequent MPs combined (Balthasar Glättli [Greens]: 17,876 and Jacqueline Badran [SP]: 16,055). The number of friends, however, is similarly skewed: Marco Romano (CVP) has the most friends, with 4,570, which amounts to more than the 53 MPs with the fewest friends combined. He is closely followed by Claudio Zanetti (SVP) with 3375, Christa Markwald (FDP) with 3296, Christian Wasserfallen (FDP) with 2854, and Cédric Wermuth (SP) with 2224 friends.

What they all share is that they are in or aspire higher offices: Christian Levrat is president of SP, Christian Wasserfallen was vice president of FDP, Natalie Rickli and Marco Romano are vice president in their respective parliament's coalition, and Cédric Wermuth (SP), Balthasar Glättli (Greens),

Jacqueline Badran (SP) aspire to become (vice-)presidents in their parties respectively. Christa Markwald is president of the national council. Claudio Zanetti was president of Zurich's local SVP group. Thus, connections may indicate politicians' success and ambitions for higher offices (see also Keller & Kleinen-von Königslöw, 2018b).

At the level of tweets (see Table 2), Roger Köppel (SVP) received the most incoming reactions: almost two third of all retweets (62%: 4,922 of 7,997), more than a third of all mentions (37%: 6,510 of 17,724), and more than a fifth of all replies (22%: 2,256 of 10,490). The MP with the second-most incoming reactions is Claudio Zanetti (SVP) with 825 incoming replies (8%), with 596 retweets (7%), and 705 mentions (4%). They are followed by MPs representing center (Gerhard Pfister, president of CVP) and left-wing parties such as Balthasar Glättli (Greens). Both Roger Köppel and Claudio Zanetti share that they are very vocal in public discourses, both delivering their provocative messages also in shows on YouTube and their own websites. Roger Köppel, a newcomer in politics, owns and is editor of a provocative, right-leaning weekly political news magazine. Thus, those with most incoming reactions are vocal and provocative actors from the right, while MPs from the center and left try to keep up.

However, while Roger Köppel broadcasts heavily, he does not listen reciprocally in terms of outgoing reactions. Claudio Zanetti (SVP) replied most often (26%: 186 of 710), retweeted most often (24%: 638 of 2,702), and mentioned most often (21%: 675 of 3,190), thus actively using the platform to interact. Again, the MP who reacted to others most often was not half as active as Claudio Zanetti. While Maya Graf (Greens) liked the most tweets, with 322, this figure accounts for only 6% of all likes (5,617), she placed second for outgoing retweets (12% with 321) and mentions (10% with 332), but hardly replies (1% with 6). She is closely followed by her Green party colleague Balthasar Glättli and CVP president Gerhard Pfister. Therefore, outgoing reactions are dominated by Claudio Zanetti from the right, but in contrast to incoming reactions, two Green party members and a center-party member listen reciprocally and engage with other Twitter users – and remain closer to the leader compared to incoming connections and reactions.

Overall, connections as well as incoming and outgoing interactions are heavily skewed with only a few MPs at the top. Those best connected in terms of followers and friends are also those who are already in or aspire higher offices in their parties or in the national council. Most incoming reactions, and therefore most active audience, receive provocative, populist,

and vocal right-wing MPs, leaving MPs from the center and left far behind. However, only one of those also listens reciprocally most often to others, Claudio Zanetti (SVP), and is much closer followed by party members of the Greens and center party CVP. That is, while two right-wing party members outperform all others with their active audience, all parties have representatives who actively listen comparably often to others in the Swiss Twittersphere.

Table 1. Summary of MPs' Networks, Numbers of Users Reacting to MPs' Tweets, and Numbers of MPs Reacting to Users' Tweets

	Unique users	*Mean users per MP*	*Median users per MP*	*Max. users per MP*	*Min. users per MP*	*First degree network in %*
Followers	117,393	3,501	1,545	46,004	37	
Friends	29,730	591	314	4.570	0	
Incoming Replies	2,506	37	10	961	1	74
Incoming Retweets	2,821	52	11	1.768	1	68
Incoming Mentions	4,976	66	24	2.167	1	69
Outgoing Replies	396	7	2	102	1	86
Outgoing Retweets	1033	16	7	329	1	86
Outgoing Mentions	1510	32	15	415	1	84
Outgoing Likes	1,843	33	17	187	1	86

Note. A total of 156 MPs with Twitter accounts were included, of which 146 were replied to, 65 were retweeted, and 155 were mentioned. A total of 73 MPs replied, 108 retweeted, 113 mentioned, and 111 liked at least once. The number of unique users includes users without descriptions/profile URLs. First degree network is calculated based on the aggregate of followers of all MPs for incoming reactions and of all friends for outgoing reactions, respectively.

Table 2. Summary of MPs' Network, Number of Tweets Reacting to an MP's Tweet, and Number of MPs' Reacting to Users' Tweets

	Sum of tweets	*Mean tweets per MP*	*Median tweets per MP*	*Max. tweets per MP*	*Min. tweets per MP*
Incoming Replies	10,490	51	9	2,256	0
Incoming Retweets	7,997	69	5	4,922	0
Incoming Mentions	17,724	114	25	6,510	0
Outgoing Replies	710	5	2	186	0
Outgoing Retweets	2,702	17	4	638	0
Outgoing Mentions	3,190	20	4	675	0
Outgoing Likes	5,617	36	8	322	0

Note. The note for Table 1 also applies here.

Swiss MPs talk primarily to ordinary citizens, who account for over a third of all of their followers (37%) (see Table 3). The second-largest group is composed of bot-like accounts, which are, in this case, mostly inactive accounts that are very hard to classify correctly (Rauchfleisch & Kaiser, 2020) (see Appendix A). The third-largest share comprises journalists (11%), followed by scientists (5%), and accounts representing private industry (4%). Those who not only follow but also actively spread MPs' tweets again mostly comprise ordinary citizens, followed by journalists, individuals representing the interests of private industry, and non-MP politicians and other political accounts. More specifically, ordinary citizens' replies, retweets, and mentions account for 52% of all incoming reactions and are, thus, the group that most often spreads the messages of Swiss MPs. Of all the incoming reactions, 14% are from individuals who were close to the political system, such as executive politicians and political parties, as well as other political accounts. MPs also reply, retweet, and mention each other. However, their tweets account for only 2% of incoming reactions. The third-most active group comprises users from private industry or social organizations (11%). They are closely followed by users from the media sector: Of all the reactions that Swiss MPs received, 10% were from individual journalists, and merely 1% came from the accounts of media organizations. Other groups such as board members, scientists, or celebrities and comedians sent 7%. Thus, Swiss MPs' multipliers are mostly ordinary citizens. However, inactive accounts, journalists, and other political accounts make up for another large share of their (active) followers (RQ2).

Table 3. Swiss MPs' Connections, Incoming Reactions, and Outgoing Reactions with Other Twitter Users

	Followers	*Friends*
MPs	137 (0.2%)	140 (0.6%)
Executive politicians	1,487 (2.5%)	972 (3.9%)
Political parties	487 (0.8%)	466 (1.9%)
(Non-MP) political accounts	1,177 (2.0%)	1,016 (4.1%)
Media accounts	122 (0.2%)	425 (1.7%)
Journalists	6,844 (11.4%)	4,374 (17.6%)
Social organizations	2,150 (3.6%)	1,151 (4.6%)
Private industry	2,609 (4.4%)	1,804 (7.3%)
Board members	997 (1.7%)	748 (3.0%)
Scientists	2,756 (4.6%)	1,417 (5.7%)
Satire and celebrities	188 (0.3%)	268 (1.1%)
Ordinary citizens	21,883 (36.5%)	9,407 (37.8%)
Spam and advertisements	787 (1.3%)	274 (1.1%)
Bot-like accounts	18,373 (30.6%)	2,404 (9.7%)
N	*59,997*	*24,868*

Table 3 (continued).

	Incoming Replies	*Incoming Retweets*	*Incoming Mentions*
MPs	40 (2.0%)	50 (2.2%)	86 (2.1%)
Executive politicians	79 (4.0%)	63 (2.8%)	140 (3.4%)
Political parties	65 (3.3%)	70 (3.1%)	154 (3.8%)
(Non-MP) political accounts	129 (6.5%)	167 (7.4%)	364 (8.8%)
Media accounts	13 (0.7%)	40 (1.8%)	67 (1.6%)
Journalists	207 (10.4%)	142 (6.3%)	450 (11.0%)
Social organizations	85 (4.3%)	86 (3.8%)	282 (6.8%)
Private industry	139 (7.0%)	144 (6.4%)	211 (5.1%)
Board members	17 (0.9%)	36 (1.6%)	47 (1.1%)
Scientists	127 (6.4%)	80 (3.6%)	189 (4.6%)
Satire and celebrities	67 (3.4%)	20 (0.9%)	18 (0.4%)
Ordinary citizens	985 (49.5%)	1.297 (57.7%)	2.030 (49.3%)
Spam and advertisements	18 (0.9%)	12 (0.5%)	2 (0.1%)
Bot-like accounts	19 (1.0%)	41 (1.8%)	81 (2.0%)
N	*1,991*	*2,246*	*4,121*

Table 3 (continued).

	Outgoing Replies	*Outgoing Retweets*	*Outgoing Mentions*	*Outgoing Likes*
MPs	37 (10.1%)	63 (6.3%)	105 (7.2%)	85 (4.9%)
Executive politicians	24 (6.5%)	79 (8.0%)	138 (9.5%)	161 (9.3%)
Political parties	10 (2.7%)	56 (5.6%)	114 (7.9%)	93 (5.4%)
(Non-MP) political accounts	40 (11.0%)	124 (12.5%)	168 (11.5%)	192 (11.1%)
Media accounts	10 (2.7%)	66 (6.7%)	140 (9.6%)	85 (4.9%)
Journalists	84 (23.0%)	193 (19.0%)	226 (15.6%)	303 (18.0%)
Social organizations	18 (4.8%)	133 (13.0%)	196 (13.5%)	158 (9.1%)
Private industry	20 (5.5%)	38 (3.8%)	99 (6.8%)	100 (5.8%)
Board members	6 (1.6%)	28 (2.8%)	42 (2.9%)	61 (3.5%)
Scientists	15 (4.2%)	41 (4.2%)	64 (4.4%)	93 (5.4%)
Satire and celebrities	4 (1.0%)	12 (1.2%)	24 (1.7%)	31 (1.8%)
Ordinary citizens	96 (26.1%)	154 (15.5%)	121 (8.3%)	361 (21.0%)
Spam and advertisements	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Bot-like accounts	3 (0.8%)	6 (0.6%)	15 (1.0%)	9 (0.5%)
N	*366*	*993*	*1,452*	*1,732*

Note. N refers to all unique users with either a description or profile URL. This number may vary from the sum of all the extrapolated single numbers because the latter were rounded.

MPs connect with similar groups that follow them and, thus, show interest in listening to them (i.e. outgoing reactions, see Table 3). The largest share of the Swiss MPs' friends are ordinary citizens (38%), followed by journalists (18%), bot-like accounts (i.e., mostly inactive accounts, see Appendix A)

(10%), and individuals representing private industry (7%). However, MPs do not react to these groups as often as they follow them. Although they most often reply and like (and second-most often retweet) tweets from ordinary citizens (26%, 21%, and 16%, respectively), if aggregated, they reacted most often to individuals who are close to the political system, such as other MPs and executive politicians, as well as political parties and other political accounts (32% of all outgoing reactions). Second most often, the MPs' reactions addressed journalists and media accounts (25%). Accounts further away from the political system were included less often in MPs' tweets: ordinary citizens were included in 18% of their tweets, social organizations and accounts representing the private industry were included in 16%, and other individual accounts – such as those of board members and scientists, as well as satire and celebrity accounts – were included in 9%. Thus, Swiss MPs connect with many ordinary citizens but reply, retweet, and like them less often than other politicians and journalists on Twitter (RQ3).

Discussion

From the perspective of public sphere theories and the opportunities for politicians to interact with people from the political periphery, this study focused on who are the most connected and interacted politicians and *to whom* politicians connect, talk, and listen on Twitter.

Overall, the politicians' networked public sphere showed heavily skewed distribution of connections and reactions. Thus, only very few politicians have the largest follower-followee network, reach the largest audience, and talk to most others, while most of others Swiss MPs connected, talked, and listened with fewer. The MPs with most followers and friends share that they are already in or aspire higher offices in their political careers. They are either already (vice) presidents of a party, coalition, or the federal council, or aspire to become one of them. Two populist MPs of the right-wing party SVP dominated the Twittersphere in terms of incoming reactions. Because both are known as media-savvy, vocal, and provocative MPs, it is less surprising that their tweets provoked far more engagement across all incoming reactions than all the other MPs have received (see also Blassnig, Ernst, Engesser, & Esser, 2019; Blassnig & Wirz, 2019). However, only one of them also reciprocally listened to their followers with replies the most often, too. Overall, MPs from the left, center, and the right all had representatives who led the charts of "top listeners." In a nutshell, most connected Swiss MPs are

already in or aspire higher offices; media-savvy and provocative MPs reach the largest audience; and top listeners are represented across the ideological spectrum.

The Swiss MPs were strongly connected with ordinary citizens, who accounted for more than a third of their followers and friends. As actors who are far away from the political center, ordinary citizens also played a role in spreading and reacting to political messages: They accounted for almost 58% of all retweets including an MPs Twitter handle. Although MPs have the most connections to ordinary citizens, they reacted most often to users who are close to the political system, such as journalists and individuals running other political accounts: Of all the MPs' replies, 10% were directed toward other MPs and every fourth toward someone from the media sector. That is, MPs connect with and benefit from ordinary citizens on the political periphery, as they serve as multipliers on Twitter; however, MPs' tweets are more focused on other politicians and journalists.

The Swiss MPs' communication focus on journalists and the media reiterates earlier findings that showed how politicians use Twitter to get in touch with the media so their messages reach an audience beyond the platform via (mainstream) news media (Metag & Rauchfleisch, 2017; Parmelee, 2014; Rauchfleisch & Metag, 2016, 2020). Especially, the accounts following a Swiss MP with most followers themselves (i.e. second-degree network) are primarily news outlets such as the free tabloid 20Min and the quality news media NZZ with each almost 400,000 followers or the tabloid Blick with almost 250,000 followers. Swiss MPs may primarily aim to reach a secondary audience via engaging with media's or journalists accounts in the Twittersphere.

Although the focus of this study is on Switzerland, it is mostly in line with previous research regarding the network characteristics and actors in the Twittersphere of other countries. The network showed the power–law distributions of the numbers of connections. Regarding followers on various social media platforms (Nielsen & Vaccari, 2013), only very few Swiss MPs receive most attention. The qualitative analysis of top Swiss MPs showed that single MPs dominate the number of connections and interactions. For example, populist M5S party leader Beppe Grillo had by far most followers on Twitter among MPs in Italy (Vaccari & Valeriani, 2015) or Geert Wilders, a populist party leader in the Netherlands, led the charts of having received most incoming mentions (Jacobs & Spierings, 2019). It is thus in line with earlier research that single (populist) accounts in the Swiss Twittersphere also received most connections and incoming reactions. However, the Swiss case deviates from the Netherland's Twittersphere, in

which populist MPs did less often engage with ordinary citizens (Spierings et al., 2018), as Swiss "top listeners" represented the (populist) right, center, and left parties.

As in the research conducted by Spierings et al. (2018), this study focused on a routine phase and included whom MPs follow and @-mention: As for the Netherlands' MPs, ordinary citizens mostly reply to Swiss MPs, but MPs reply more often to other political accounts. Additionally, both countries' MPs often retweet other political accounts and users from the media sector. However, while only 13% of the individuals in the Netherland's MPs' friends network consisted of ordinary citizens and almost never retweet them (Spierings et al., 2018), Swiss ordinary citizens account for over a third of Swiss MPs' friends and are the group that is retweeted the third most often. Thus, although both countries' MPs have similar networks and focus on actors who are close to the political system (and the media), ordinary citizens are more often amplified by MPs in Switzerland than in the Netherlands. While these two studies focused on a routine period, Graham et al. (2013) focused on a campaign period. In that time, the UK's MPs replied to 59% of all replies to members of the public, which is far less often than the replies to other politicians (16%) and journalists (10%). It might, thus, be that the Swiss MPs would reply even more often to ordinary citizens during the election period than in the routine phase. Valeriani and Vaccari (2015) analyzed the Italian party leaders' followers during the 2013 national election and found that most "top followers" were celebrities. Celebrities with a lot of followers are rare and may have little impact in the Swiss MPs Twittersphere. One notable exception is comedian and former political late-night talk show host Viktor Giaccobo with almost 200,000 followers. Again, it may be that celebrities with large followerships enter the political debate during election phases, thereby having a strong impact on the elections; however, this was not the case in the routine period under investigation.

The deviating results can be explained by three specifics related to Switzerland. The country's traditional militia system and direct democracy require Swiss MPs to stay close to the public. Indeed, even in a nonelection phase, Swiss MPs often connect and react to ordinary citizens: more than every fourth reply is directed to an ordinary citizen, and every fifth liked tweet is from an ordinary citizen. These reactions indicate that Swiss MPs read ordinary citizens' tweets and engage in discussions with them, which might pay off. An MP's replies may, in return, yield substantial goodwill, such as the increased intention to vote for him or her (Lee & Shin, 2012; Tromble, 2018). Even if MPs only like ordinary citizens' tweets, this might

increase the citizens' goodwill because it will show that the MP read, liked, and possibly agreed with the tweet and generally keeps close to users who are on the political periphery. Whether this holds true in the next election for Switzerland (e.g., if aspiring and active politicians on Twitter win higher offices) and for countries or states with similar features such as referendums, is an empirical question for future research.

The Swiss MP's Twittersphere therefore shed light on how actors from the political center connect, talk, and listen to actors from the political periphery – despite obstacles such as losing control over the communication situation or algorithmically unavoidable context collapse. Indeed, the results point to how political actors try to remain control over the communication situation by reacting to befriended in more than four out of five cases. However, the low threshold of engaging with Swiss MPs by using reactions also reflects the need and success of ordinary citizens connecting and reacting to key actors in Swiss politics. Additionally, these low threshold reactions also serve Swiss MPs as their messages spread beyond their first-degree networks, that is, roughly one third of all incoming reactions derive from a secondary audience. Thus, the Swiss MPs Twittersphere reflects how politicians use Twitter to both engage cautiously with ordinary citizens while also trying to remain control over the communication situation and target vital multipliers such as journalists.

Overall, the political periphery has gotten close to the political center in terms of actively engaging with the center's content thanks to the Twittersphere. Yet, the political center prefers to target rather influential accounts than representatives from the political periphery. Future research should therefore investigate to what degree the focus on influential accounts stems from technological implementations such as algorithmic selection (e.g., what appears in their news feeds) and from personal decisions such as to mitigate the risk of losing control over the communication situation. Further, future studies that aim to map national networked public spheres should include specifics of the country's political system as well as platform-specific affordances to understand who is talking and listening to whom.

This study has its limitations. Although the three-week period covered a representative routine phase of Swiss politics, it is not the only time that MPs need to talk and listen to groups on the political periphery, such as ordinary citizens. Apart from local and national elections, citizens are called to the ballots three to four times per year to have the final say on national votes. MPs could play a crucial role in persuading citizens to vote yes or no in these votes – simply by amplifying other minor actors (Benkler et al., 2015).

Furthermore, the focus on accounts' description or URL led to omitting many inactive accounts in the Swiss Twittersphere. It therefore remains unclear who or what these accounts represent and whether they get active again. Additionally, the study did not focus on the content of tweets. Tromble (2018) found that politicians tend to go silent upon receiving negative replies, which might also be the case in Switzerland. Furthermore, because of Twitter's API restrictions, it was not possible to ascertain who liked the MPs' tweets. Because "likes" is the most used reaction, it remains unknown whether the groups close to the political system or those further away from it account for the largest number of those who like MPs tweets. Especially in the cases in which the number of reactions is used as an indicator of public opinion (Jungherr, 2016), it would be crucial to know whether this number reflects the views of the public or simply those of many politicians.

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Appendix

A. Distribution of Botometer scores of the identified accounts

Botometer generates over 1,200 features from a Twitter user (C. A. Davis et al., 2016). These can be grouped into network, user, friend, temporal, content, and sentiment features. The tool calculates a probability score to indicate whether an account shows similar characteristics as known social bots, i.e. the tool detects bot-like account (score closer to 1). Figure A1 shows the distribution of Botometer scores in the form of a density plot. A total of 361 accounts could not be analyzed because they had either been removed, had been set to "private," or had never produced a tweet (Keller & Klinger, 2018). The threshold for being a bot was set conservatively at 0.76 (Keller & Klinger, 2018) – that is, users with scores above this threshold were classified as bot-like accounts.

Surprisingly, many accounts were labeled as bot-like accounts, given their high Botometer scores (59,567 accounts with a probability greater than 76%) or even the more conservative CAP scores (55,233 accounts with a probability greater than 50%). The intersection of both scores revealed that 55,233 accounts had a high probability of being automated accounts.

Undertaking a closer look at these bot-like accounts, this finding points to the difficulty associated with the use of bot-detection tools: Bots account for 56% of all followers and 20% of friends but only 1% of active accounts. This indicates that bot accounts did not enter the political debates and were inactive during the fall session in 2018. Most of the active bot-like accounts (N = 130) seldom tweeted (median = 2), indicating that despite the display of bot-like behavior, it is possible that false positives were returned in this case – a problem also detected by Rauchfleisch and Kaiser (2020). These were accounts that produced only a few tweets. Only two accounts were very active: one focused on US politics and the other one on pictures and videos of animals and landscapes. That is, although numerous accounts did receive a high probability score, suggesting that they were bots, these were mostly inactive accounts, and the few active bots did not engage in political debates. Thus, bot-like accounts did not affect the political debates during the fall session in 2018.

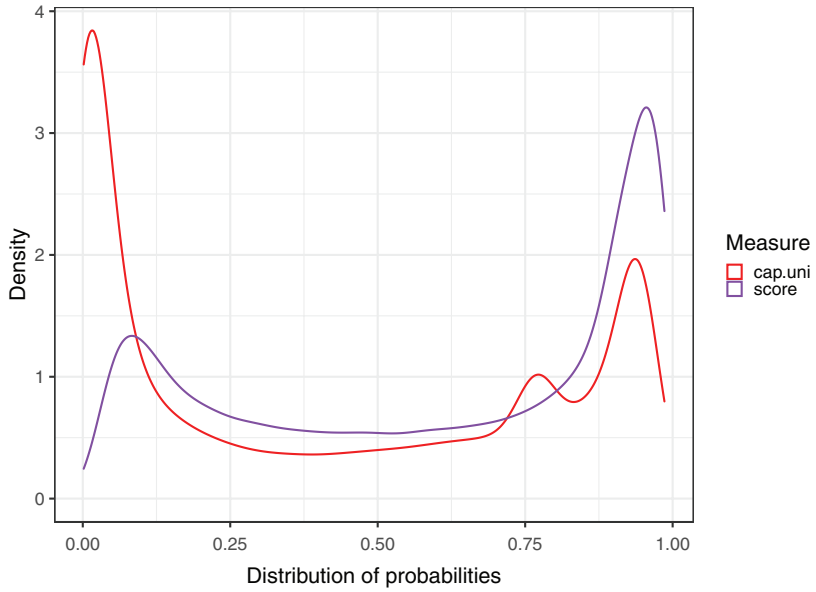

Figure A1. Distribution of the Botometer scores/CAP scores of the identified accounts.

Note. N = 128.342, bandwidth = nrdo

B. Summary statistics of the automated classification

The automated analysis classified 51% (36,243 accounts) of all accounts with either a description or a URL. The analysis could classify only 33% of all users retweeting an MP and 38% of users replying to an MP, but 68% of MPs addressed users in outgoing replies and 64% in outgoing retweets.

Table B1. Summary Statistics of the Automated Classification

	Total users (unique)	*With description or URL*	*Automatically classified*
Followers	117,393	59,996 (51%)	32,683 (54%)
Friends	29,909	24,867 (83%)	11,801 (47%)
Incoming Replies	2,506	1,991 (79%)	760 (38%)
Incoming Retweets	2,821	2,246 (80%)	749 (33%)
Incoming Mentions	4,976	4,120 (83%)	1,742 (42%)
Outgoing Replies	396	366 (96%)	248 (68%)
Outgoing Retweets	1,033	993 (96%)	636 (64%)
Outgoing Mentions	1,510	1,452 (96%)	897 (62%)
Outgoing Likes	1,843	1,732 (94%)	1,073 (62%)
N	*129,063*	*70,589*	*36,243*

Table B2. Summary of Validity Tests of the Automated Classification

	Accuracy	*Precision*	*Recall*	*F1 score*
MPs	1.00	1.00	1.00	1.00
Executive politicians	1.00	1.00	1.00	1.00
Political parties	0.83	1.00	0.83	0.91
(Non-MP) political accounts	0.50	1.00	0.50	0.67
Media accounts	0.71	1.00	0.71	0.83
Journalists	0.82	0.82	1.00	0.90
Social organizations	0.83	1.00	0.83	0.91
Private industry	0.86	0.86	1.00	0.92
Board members	1.00	1.00	1.00	1.00
Scientists	0.70	0.70	1.00	0.82
Satire and celebrities	0.83	1.00	0.83	0.91
Citizens	0.89	0.89	1.00	0.94
Spam and ads	0.80	0.80	1.00	0.89
Bot-like accounts	1.00	1.00	1.00	1.00

C. Comparison between hierarchical and nonhierarchical classification

Twitter users may fall into multiple groups. For example, one MP is a journalist and the CEO of a media outlet. Although it is interesting to compare how individuals represent different groups, in order to clearly categorize users into one group, the results were classified hierarchically (from top to bottom), following previous research (Spierings et al., 2018).

The largest difference resulting from the hierarchical classification occurred for the category of social bots (-9%). While many inactive accounts were labeled as bots and belong to followers, they could also be classified into other categories. The hierarchical classification also led to almost 4% fewer citizens. However, because almost all individual groups encompass citizens, this makes the results clearer. The difference of almost -3% of non-MP political accounts is based on the latter refinement of the political categories: The keywords of executive politicians and political parties were still included in the list of non-MP political accounts, which is why they were counted twice in the nonhierarchical classification.

Table C1. Comparison of Automated Classification Results Based on Multiple Classification and Hierarchical Classification Processes

	Nonhierarchical	*Hierarchical*	*Difference*
MPs	141 (0.39%)	141 (0.39%)	0 (0%)
Executive politicians	793 (2.19%)	788 (2.17%)	5 (0.01%)
Political parties	125 (0.34%)	123 (0.34%)	2 (0.01%)
(Non-MP) political accounts	1,869 (5.16%)	939 (2.59%)	930 (2.57%)
Media accounts	185 (0.51%)	183 (0.5%)	2 (0.01%)
Journalists	6,044 (16.68%)	5,782 (15.95%)	262 (0.72%)
Social organizations	755 (2.08%)	650 (1.79%)	105 (0.29%)
Private industry	2,845 (7.85%)	2,419 (6.67%)	426 (1.18%)
Board members	1,293 (3.57%)	850 (2.35%)	443 (1.22%)
Scientists	4,275 (11.8%)	3,329 (9.19%)	946 (2.61%)
Satire and celebrities	15 (0.04%)	9 (0.02%)	6 (0.02%)
Citizens	3,702 (10.21%)	2,278 (6.29%)	1,424 (3.93%)
Spam and advertisements	92 (0.25%)	69 (0.19%)	23 (0.06%)
Bot-like accounts	21,912 (60.46%)	18,683 (51.55%)	3,229 (8.91%)
N (unique)	*36,243*	*36,243*	

D. Power-law distribution

Previous studies claimed that heavily skewed distributions followed a power-law distribution. If true, such a mathematical distribution would help to model accounts' behavior in simulations such as agent-based modelling. However, researchers did not use a statistical test to substantiate their claims. Thus, I use a Kolgomorov-Smirnov test via a bootstrapping procedure (N = 5,000) (Clauset et al., 2009; Gillespie, 2015) to analyze if connections (i.e. followers and friends) and interactions (e.g., incoming retweets, outgoing replies, etc.) follow a power-law distribution.

Although the power-law distribution of attention with regard to the number of followers, friends, and tweets seems to describe all the distribution well (e.g., only few receive replies from most while most receive replies from a few), half of them do not statistically (see Table D1 and D2). Power-law distribution were found in half of all tests, that is, regarding the number of followers (p=0.20) and friends (p=0.21), the number of users for incoming replies (p=0.28), incoming mentions (p=0.61), outgoing retweets (p=0.74), outgoing mentions (p=.24), and for the number of tweets for incoming (p=0.68) and outgoing mentions (p=0.18).

Researchers should therefore be careful when claiming to have detected power-law distributions or modelling accounts' Twitter behavior based on power-law distributions.

Table D1. Summary of MPs' Networks, Numbers of Users Reacting to MPs' Tweets, and Numbers of MPs Reacting to Users' Tweets

	Unique users	*Mean users per MP*	*Median users per MP*	*Max. users per MP*	*Min. users per MP*	*p-value (KS test)*
Followers	117,393	3,501	1,545	46,004	37	
Friends	29,730	591	314	4.570	0	
Incoming Replies	2,506	37	10	961	1	
Incoming Retweets*	2,821	52	11	1.768	1	0.011
Incoming Mentions	4,976	66	24	2.167	1	0.608
Outgoing Replies*	396	7	2	102	1	0.035
Outgoing Retweets	1033	16	7	329	1	0.740
Outgoing Mentions	1510	32	15	415	1	0.236
Outgoing Likes*	1,843	33	17	187	1	0.030

Note. A total of 156 MPs with Twitter accounts were included, of which 146 were replied to, 65 were retweeted, and 155 were mentioned. A total of 73 MPs replied, 108 retweeted, 113 mentioned, and 111 liked at least once. The number of unique users includes users without descriptions/profile URLs. Kolmogorov–Smirnov tests were conducted via bootstrapping (N=5,000): ***p<.001, **p<.01, *p<.05, +p<0.1.

Table D2. Summary of MPs' Network, Number of Tweets Reacting to an MP's Tweet, and Number of MPs' Reacting to Users' Tweets

	Sum of tweets	*Mean tweets per MP*	*Median tweets per MP*	*Max. tweets per MP*	*Min. tweets per MP*	*p-value (KS test)*
Incoming Replies**	10,490	51	9	2,256	0	0.003
Incoming Retweets*	7,997	69	5	4,922	0	0.019
Incoming Mentions	17,724	114	25	6,510	0	0.684
Outgoing Replies**	710	5	2	186	0	0.006
Outgoing Retweets+	2,702	17	4	638	0	0.067
Outgoing Mentions	3,190	20	4	675	0	0.178
Outgoing Likes*	5,617	36	8	322	0	0.041

Note. The note for Table 1 also applies here.