

## RESEARCH-IN-BRIEF

**(Alternative) media sources in AfD-centered Facebook discussions**

**(Alternative) Medien in AfD-nahen Facebook-Diskussionen**

*Marko Bachl*

**Marko Bachl (Dr.)**, University of Hohenheim, Department of Communication, Fruwirthstraße 46, 70599 Stuttgart, Germany; Contact: marko.bachl(at)uni-hohenheim.de

# RESEARCH-IN-BRIEF

## (Alternative) media sources in AfD-centered Facebook discussions

### (Alternative) Medien in AfD-nahen Facebook-Diskussionen

Marko Bachl

**Abstract:** In this research report, I investigated which (media) sources were shared on 122 AfD-related Facebook pages during the year 2016. Results show that mainstream media outlets were *not* absent from these discussions. The established media sources *Welt* and *Focus* were by far the most frequently shared sources, and all major media outlets were represented. However, many of the outlets, which were often mentioned in the debates on an alternative-right (online) media universe, were also highly visible. They were supplemented by a variety of less well-known websites and YouTube channels, many of which are explicitly positioned against the (self-perceived) political and media mainstream. The comparison of party and user messages indicated that the AfD and its supporters preferred somewhat different sources. The party communicators were more likely to refer to more intellectual, conservative-right outlets; the users were more likely to share more controversial and less well-known alternative sources.

**Keywords:** Alternative media sources, Alternative für Deutschland (AfD), Facebook

**Zusammenfassung:** In diesem Bericht untersuche ich, welche (massenmedialen) Quellen im Jahr 2016 auf 122 AfD-nahen Facebook-Seiten geteilt wurden. Die Ergebnisse zeigen, dass die untersuchten Online-Diskussionen *kein* Mainstream-Medien-freier Raum waren. Die Online-Angebote von *Welt* und *Focus* waren die mit Abstand meistgeteilten Quellen und alle wichtigen Medienangebote waren vorhanden. Allerdings waren auch viele der Quellen, die in den Diskursen über eine alternativ-rechte (online) Medienlandschaft genannt werden, deutlich sichtbar. Zusätzlich wurden zahlreiche weniger bekannte Webseiten und YouTube-Kanäle geteilt, von denen sich viele explizit als gegen den (wahrgenommenen) politischen und medialen Mainstream positionierten. Der Vergleich von Partei- und Nutzer-Inhalten ergab leichte Unterschiede. Die Partei-Kommunikatoren bevorzugten intellektuell anmutende, rechts-konservative Quellen; die Nutzer teilten mit größerer Wahrscheinlichkeit kontroversere und weniger bekannte Quellen.

**Schlüsselwörter:** Alternative Medien, Alternative für Deutschland (AfD), Facebook

**Note:** Supplementary material is available at the OSF: <https://doi.org/10.17605/OSF.IO/89H2E>

## 1. Introduction

Public and academic debates have been concerned with the decline of trust in established journalistic news media and a simultaneous increase of attention to so-called alternative media sources (see Schweiger, 2017, for an overview). In Germany, the debate about mainstream and alternative media has been politicized with the rise of a new party, the Alternative für Deutschland (Alternative for Germany, AfD). According to a representative survey in 2016, most Germans regarded journalistic news coverage as credible. However, a significant part of the population disagrees. Supporters of the AfD – in contrast to supporters of all other parties – not only perceived established media sources as less trustworthy, but they also were less skeptical towards social media as news sources (Forschungsgruppe Wahlen, 2016, p. 28). These observations correspond with the policy proposals and communicative activities of the AfD. The party has explicitly positioned itself as critical of the mainstream media (especially the public broadcasting service; Alternative für Deutschland, 2016, p. 48) and operates the most popular German party page on Facebook (Arzheimer, 2015, for an analysis of its content).<sup>1</sup>

Some journalistic analyses pointed to alternative media sources which seem to be popular among AfD sympathizers and which explicitly position themselves outside of or against the political and media mainstream.

Among them are online news websites, such as *Epoch Times* and *Deutsche Wirtschaftsnachrichten*; older alternative-right outlets, such as *Junge Freiheit* and *Compact*; and publications with links to Russia, such as *RT Deutsch* and *Sputnik News* (e.g., Kohrs, 2016; Ringler Schacht, Sch-nuck, & Schöffel, 2016; Winterbauer, 2016).<sup>2</sup> The web project #neurechtewelt<sup>3</sup> allows to conveniently screen the most popular links on the Facebook pages of AfD and Pegida and thereby also identifies prominent mainstream and alternative media sources in their online discussion. Schweiger (2017, p. 55) looked at similar alternative sources in his review of highly shared news items on social media.<sup>4</sup> He concluded that many of them are right-wing, critical toward the system, and racist, and that they publish fakes, lies, and half-truths to promote their political agenda. Schweiger's characterization exemplifies the worries which are associated with an increasingly widespread distribution of certain types of alternative media sources.

Online social networks and especially Facebook play an important role in the distribution of content from alternative (media) sources. They are feared to contribute to “filter bubbles” (Pariser, 2011) or “echo chambers” (Sunstein, 2001), where predominantly attitude-consistent information and like-minded opinions are received and shared. Comments to and shares of (alternative)

1 The Facebook page of the national AfD party organization (<https://www.facebook.com/alternativ fuerde/>) has over 315,000 likes, more than the national pages of any other German party (as retrieved on February 7th, 2017).

2 The examples can be found here: <http://www.epochtimes.de/>; <https://deutsche-wirtschaftsnachrichten.de/>; <https://www.compact-online.de/>; <https://jungefreiheit.de/>; <https://deutsch.rt.com/>; <https://de.sputniknews.com/>.

3 <https://neurechtewelt.github.io/>

4 Based on the 10000flies ranking, <http://www.10000flies.de/>.

news sources by professional communicators and individual users alike contribute twofold to this phenomenon: Directly, because users, who actively engage in online discussions on certain ideologically partisan Facebook pages, are overwhelmingly exposed to the information and opinions which were selected by like-minded contributors; indirectly, because the Facebook news feed algorithms are more likely to select new content which is similar to items with which a user has previously engaged. The recorded activities also include clicks on links to (alternative) media sources. Claims of social media filter bubbles and echo chambers are supported by empirical studies on political follower networks on Twitter (e.g., Barberá, Jost, Nagler, Tucker, & Bonneau, 2015; Colleoni, Rozza, & Arvidsson, 2014) as well as ideological communities (Del Vicario et al., 2016) and news page use (Schmidt et al., 2017) on Facebook. Alternative media outlets, which can be considered niche sources from a general audience perspective, may well be important sources within certain filter bubbles and echo chambers. Conversely, mainstream media sources may be less prominently represented. It should be noted, that the existence of politically homogenous discussion spaces in online social networks does not necessarily imply that individual users inform themselves exclusively from these sources (Zuiderveen Borgeusius et al., 2016). Social media analyses such as the present study and the articles cited above focus on communication within homogenous spaces, which can, but do not have to be, a relevant part of a user's overall communication environment.

Overall, there seems to be public interest in and some preliminary assump-

tions about which alternative media sources might be important in the online discussions of the AfD and its supporters. However, a thorough empirical basis is missing from the debate. In this research-in-brief report, I aim to close this gap by answering two basic research questions:

*RQ1: Which (media) sources were referred to in AfD-centered Facebook discussions?*

*RQ2: Did party communicators and individual Facebook users refer to different sources?*

The research goals are strictly quantitative and descriptive in nature. It is, after all, important to know which sources actually have to be considered when we want to conduct detailed analyses, evaluate the sources qualitatively, and proceed with normative debates. The main contribution is therefore to collect, structure, and condense large amounts of publicly available data. I use a computational social science approach to address the research questions (Lazer et al., 2009) and present the results in a flexible format. It allows the readers to explore the results themselves, come to their own conclusions, and use them as starting point for further investigations.

## 2. Methods

The study is based on all posts, comments, and replies on core AfD Facebook pages during the year 2016, as they could be retrieved during the last week of the year. The Facebook Graph API<sup>5</sup> was used for the main data col-

<sup>5</sup> <https://developers.facebook.com/docs/graph-api>

lection. I relied heavily on custom modifications of the *R* (R Core Team, 2016) package *Rfacebook* (Barberá, Piccirilli, & Geisler, 2017). Other important tools were the *R* packages *tuber* (Sood, 2016), *urltools* (Keyes et al., 2016), *stringi* (Gagolewski & Tartanus, 2016), and packages from the *tidyverse* (Wickham, 2016).<sup>6</sup>

## 2.1 Sample and Facebook data retrieval

The core AfD Facebook pages were identified by snowball network sampling. The national party page of the AfD (see Footnote 1) was used as seed page, and the network was followed for three steps, in each step collecting all pages which were liked by the pages from the previous step. This produced 7,911 pages, which were at maximum three steps apart from the seed page (i.e., seed page → page 1 → page 2 → page 3). All pages which had an indegree of at least 30 (i.e., were liked by at least 30 other pages) were selected for the final sample (see Waldherr, Maier, Miltner, & Günther, 2016, for a similar approach). The procedure avoided an artificial definition of where to find the most important AfD pages beyond the national party's page. The exact

value of 30 is of course somewhat arbitrary, but it made sure that only pages which were highly connected within the network were considered. After removing two ineligible pages (*Junge Freiheit* [weekly newspaper] and *HC Strache* [Austrian politician]), the sample consisted of 122 pages, mostly of regional and local sections of the party, of its youth organization *Junge Alternative*, and of AfD politicians. All posts on these pages ( $n = 170,033$ ), all comments to the posts ( $n = 1,455,200$ ), and all replies to the comments ( $n = 960,077$ ) were retrieved (overall  $n = 2,585,310$ ). It is important to recall that many AfD pages allowed users to post directly to the page. The large number of posts therefore does not reflect only party communication, but also user comments from an actively participating community. Posts, comments, and replies were treated interchangeable in the analysis and I use the general term “messages” for all of them in the subsequent sections.

## 2.2 Data preparation: Identification of (media) sources

A reference to a (media) source in a Facebook discussion was operationalized as a hyperlink to the source. There are of course other possible references, for example mentioning the coverage of a certain media outlet in words only (“as reported yesterday by the *Tagesschau*”). However, it seems plausible enough that posting a hyperlink is the most common way of referring to a source on the Internet. Because the research interest is in (media) sources in general and not in links to specific web content (e.g., specific articles, videos, etc.), the links were reduced to their

<sup>6</sup> Code snippets and aggregated data sets are available at the OSF: <https://doi.org/10.17605/OSF.IO/89H2E>. Completely reproducible code cannot be shared, because data collection and preparation involved manual steps which cannot be reproduced automatically, and because an individual authentication with the API is necessary. The complete data set cannot be shared in a public repository because of concerns about users' privacy and Facebook's terms and conditions. I will share the complete data sets for research purposes upon requests that include confidentiality and non-distribution assurances.

main domain with a four-step procedure. First, all hyperlinks were extracted from each message’s text and from the dedicated “link” entry.<sup>7</sup> Second, each link was resolved by calling the link and collecting the URL from the reply’s header. This is necessary to identify the sources which were linked to with general (e.g., bit.ly) and outlet-specific (e.g., sz.de) URL shorteners. Third, the domain was extracted from each resolved link. Forth, modifiers such as “m.” for a mobile website were removed and some manual corrections were applied.<sup>8</sup> A preliminary analysis revealed that YouTube was the single most popular source. This finding is

not very informative, because all kind of sources share video content via the platform. Therefore, the video IDs were extracted from all YouTube URLs, and the YouTube Data API<sup>9</sup> was used to retrieve the channel in which the video was published. YouTube channels of frequently occurring sources were matched manually with the respective domains for the analysis.

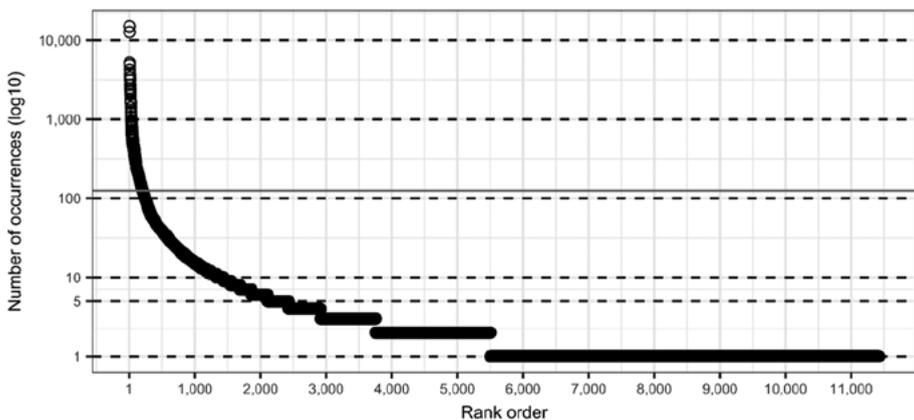
Overall, I identified 11,424 sources, which were referred to 199,811 times. Figure 1 gives an overview of the distribution of the sources. A power-law distribution, which is common in many social media analyses, is visible on first glance. More precisely, 9,317 sources (82% of all sources) were found in only 5 or fewer messages and together accounted only for 8% of all occurrences, about the same volume as the single most important source alone. In contrast, the 200 most prominent sources accounted for 71% of all source occurrences. The subsequent

7 It is possible to add a link to a Facebook post without including the actual URL in the text. This functionality does not exist for comments and replies.

8 For example, links to n24.de were forwarded to welt.de at the time of data preparation because of the restructuring of Springer’s online publishing. This was reverted before data analysis, because n24.de was still a distinct source at the time when the message was published. All manual corrections are documented at the OSF (see Footnote 6).

9 <https://developers.google.com/youtube/v3/>

**Figure 1. Distribution of source occurrences**



*Note.* The figure shows the number of occurrences of each source on the y axis (note the log<sub>10</sub> scale) and the rank order of the sources based on number of occurrences on the x axis. The 200 most frequent sources are above the red horizontal line.

categorization and analysis focused on these 200 most popular sources. Although an analysis of the long tail of the distribution would also be interesting, the selection accounts for the majority of source occurrences and allows for a meaningful characterization of source use in AfD-centered Facebook discussions.

### 2.3 Source categorization and party messages

There is no generally accepted definition of what exactly constitutes an alternative (media) source (Rauch, 2015; Schweiger, 2017). Categorizations vary strongly dependent on whether one evaluates content (e.g., politically balanced vs. slanted), production standards (e.g., meeting journalistic stand-

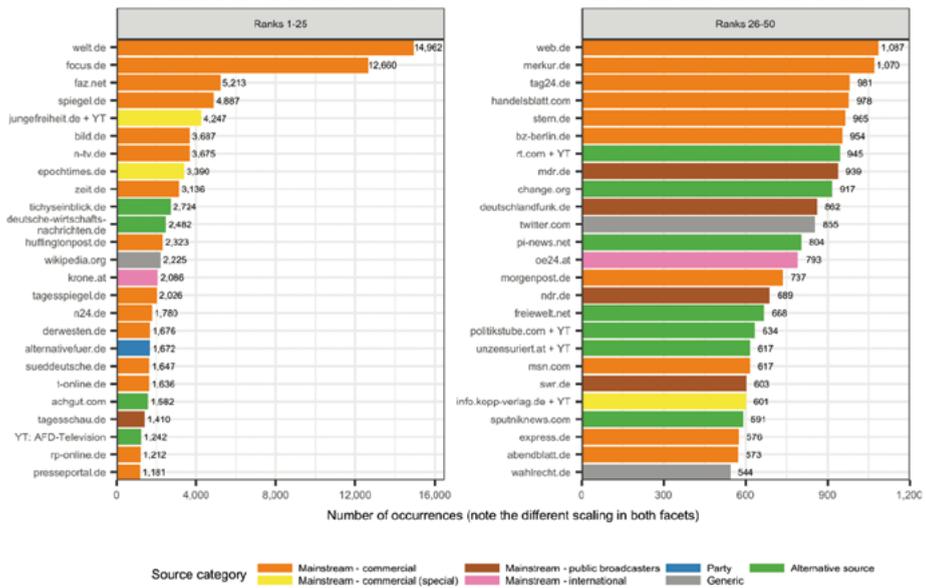
ards), producers (e.g., paid journalists vs. voluntary users), business models (e.g., profit-orientation), audiences (e.g., size or composition), or audience perceptions of the sources. Given the lack of consensus, I chose a straightforward categorization which is sufficient for the descriptive aims of this report. The basic logic is to identify sources which can be labelled as “mainstream” according to some widely acknowledged and reliable criteria (see Table 1). All remaining sources were, following a negative definition, preliminary considered as “alternative.” They of course do not form a homogenous category, but have to be further described and classified based on the descriptive results. The top 200 sources were manually sorted into the 7 categories.

**Table 1. Categorization of sources**

Category	Definition
<i>Mainstream media sources</i>	
Traditional-commercial websites	Websites which are listed in the IVW online audience measurement. <sup>A</sup> IVW membership is an indicator for belonging to the commercial online media mainstream in Germany. Some online outlets of smaller commercial print outlets and German affiliates of international content portals (e.g., msn.com/de-de) were additionally included in this category.
Online outlets of public broadcasters	Websites and YouTube channels which are published by the German public broadcasters. dw.com (Deutsche Welle) was additionally included in this category.
International media outlets	Websites of established international (i.e., non-German) media outlets. The respective media sources were checked manually and only assigned to this category if the source clearly fulfilled the “established” criterion (as, for example, indicated by membership in large audience measurement networks or being published by a public broadcaster).
Party sources	Websites and YouTube channels which are officially associated with the AfD as stated in their imprint; The imprints of the respective sources were checked manually for such statements.
Generic / non-news sources	Established general web services (e.g., Google, Twitter) and non-news content platforms (e.g., Wikipedia, gesetz-im-internet.de, wahlrecht.de)
Institutions	Websites of political institutions and authorities (e.g., bundestag.de, bamf.de)
Alternative sources	Websites which could not be assigned to one of the other categories.

*Notes.* A) <http://ausweisung.ivw-online.de/>

Figure 2. Top 50 sources in AfD-centered Facebook discussions



Note. “YT” indicates YouTube channels; “+ YT” next to a domain indicates that the occurrences include both the domain and its YouTube channel.

Party messages were identified with a publisher-page comparison. Messages which were published *by* one page *on* the same page were classified as party messages and all other messages as user messages. This classification is of course imperfect, because we cannot know whether user messages were indeed posted by individual persons and without instructions of the AfD or other organizations. Similarly, it would be impossible to reliably classify messages by AfD party representatives – especially less-known representatives of local chapters. The operationalization of party messages is therefore rather conservative. Overall, 44,981 source occurrences (23%) were extracted from party messages and 154,830 (77%) from user messages.

### 3. Results

#### 3.1 RQ1: Which (media) sources were referred to?

Figure 2 presents the occurrences of the 50 most prominent sources. A full account of the 200 most prominent sources is available from interactive web plots, which allow for more detailed explorations beyond the constraints of the journal format.<sup>10</sup> The subsequent descriptions give an over-

<sup>10</sup> The interactive web plots are available here: [https://bachl.shinyapps.io/alternative\\_media\\_sources\\_in\\_afd-centered\\_facebook\\_discussions/](https://bachl.shinyapps.io/alternative_media_sources_in_afd-centered_facebook_discussions/). They allow to filter by message category and type of message (party vs. user messages). A static plot version, the data to produce the plots, and a local version of the interactive plots are available at the OSF (see Footnote 6).

view of some patterns in the top 200 sources. All readers are invited to use the interactive presentation or the provided data set to explore the results and come to their own conclusions.

It becomes obvious at first glance that the core AfD Facebook discussions in 2016 were not a mainstream-media-free space. The online outlets of *Welt*<sup>11</sup> and *Focus*<sup>12</sup> were by far the most dominant sources. Most of the established national and many regional and local news outlets were also among the top 200 sources. There were, however, some noticeable results within the group of mainstream media sources. The public broadcasters, which are often criticized by the AfD and its supporters, and *Bild*<sup>13</sup>, which is speculated to work against the party (e.g., Kemper, 2016), were referred to less often compared to their standing in general audience rankings (e.g., 10.000flies, see Footnote 4, or IVW, see Table 1). In contrast, three sources, which were classified as mainstream commercial sources according to their IVW membership, but which are often mentioned in the debate about alternative-right media outlets, were remarkably popular in the AfD-centered discussions (highlighted in yellow in Figure 2). The website of the right-conservative weekly *Junge Freiheit* and the German edition of the controversial news site *Epoch Times* were referred to about as often as, for example, *Bild* or

*Spiegel Online*<sup>14</sup>. The news website of the *Kopp Verlag*, a publishing house which is specialized in books on conspiracy theories, amongst other topics, was also among the 50 most frequent sources.<sup>15</sup> Its frequency was comparable to, for example, the regional public broadcasters' outlets *ndr.de* and *swr.de*. Additionally, some international media outlets were found among the top 200 sources, most prominently the websites of Austrian yellow press outlets (*krone.at*, *o24.at*, *diepresse.com*).

A great variety of alternative sources were shared in the AfD-centered discussions. Some of them occurred very frequently. The conservative online opinion magazine *Tichys Einblick* and the alternative news website *Deutsche Wirtschaftsnachrichten* were referred to about as frequently as the online editions of the established print media outlets *Süddeutsche*<sup>16</sup> or *Zeit*<sup>17</sup>. The high visibility of *Achse des Guten* (another conservative opinion outlet, achgut.com) and the YouTube channel *AfD Television* (operated by an anonymous AfD member, but not officially affiliated with the party) are also noteworthy. More controversial sources, which are often mentioned in the current debates, can already be found around the ranks 30 to 60, with about 500 to 1,000 occurrences during the year 2016. Among them were the rather openly right-wing outlets *PI News*, *Compact Magazin*, and *Politikstube*, the Russia-influenced

11 National newspaper, considered to be positioned on the conservative side of the political spectrum (see Donsbach, 1997, for this and all following descriptions of the media outlets' political leanings).

12 National weekly news magazine, considered to be positioned on the conservative side of the political spectrum.

13 Germany's leading national tabloid newspaper.

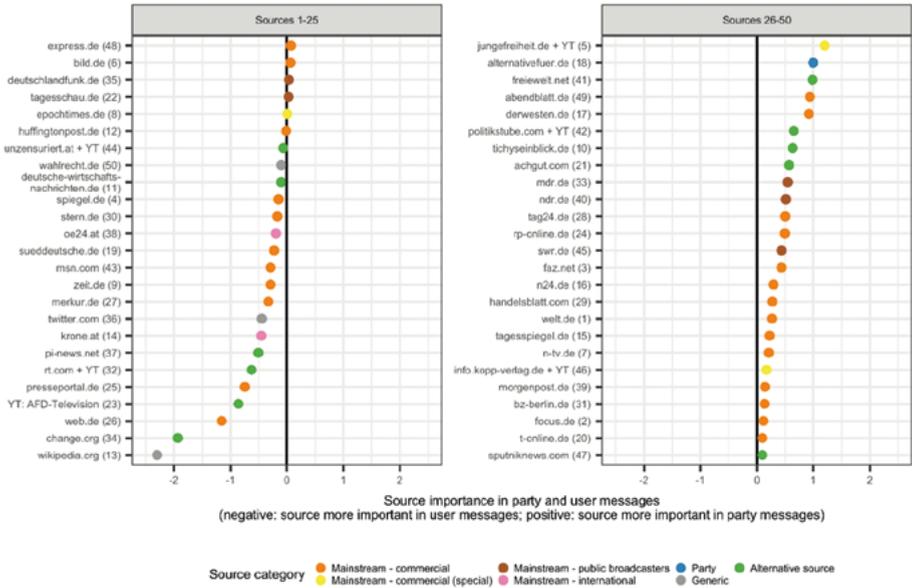
14 The online publication of a national weekly news magazine.

15 The news site of Kopp has since been discontinued.

16 National newspaper, considered to be positioned slightly on the liberal side of the political spectrum.

17 National weekly newspaper, considered to be positioned slightly on the liberal side of the political spectrum.

Figure 3. Comparison of sources in party and user messages



Note. The figure shows the logarithm of the ratio of the shares of one domain of all party messages and of all user messages on the x axis. This is an indicator for the relative importance of a source within party and user messages. Taking the logarithm of the ratio transforms the values to a linear scale, which makes comparisons more convenient. The interpretation is similar to the familiar log(odds) coefficients in logistic regression. The number in parentheses is the overall rank of the source (see Figure 2).

RT Deutsch and Sputnik Deutschland, and the conspiracy news site *unzensuriert.at*. Similar less well-known websites appeared lower in the ranking, but still with 100 to 500 occurrences during one year. A qualitative screening showed that many describe themselves explicitly as alternative or anti-mainstream. Finally, the videos of quite a few smaller, most likely privately operated YouTube channels were shared substantially.

### 3.2 RQ 2: Comparison of party and user messages

Most of the top 50 sources showed only relatively small differences in their relative importance within party and

user messages (Fig. 3). More pronounced differences were visible among the less prominent sources (see the complete [interactive] plot, Footnote 10).

The most noticeable result is not surprising: Links to party websites were more likely shared by party pages. Among the sources most likely distributed by users were many alternative sources. Closer inspection revealed that in particular campaign and petition platforms, for example *campact!*, *Abgeordnetencheck*, and *openPetition*, were almost exclusively shared by users. General (e.g., *Wikipedia*, *Statista*) and specialized (*dejure.org*, *gesetze-im-*

*internet.de*<sup>18</sup>) content platforms also had higher odds of being found in user messages. The clear differences at the upper and lower ends of the complete (interactive) plot are mainly caused by overall less prominent sources which are shared predominantly by either party pages or individual users. The results seem highly plausible: Party pages linked to their websites to communicate party statements. Users shared online petitions to gather support from other users and referred to content platforms to strengthen their positions and arguments.

A closer look at the (alternative) sources which were more important overall but which were preferred nonetheless by either party pages or individual users gives some indication of the dominant sources' roles in the Facebook discussions (see Figure 3). Of those sources, the website of the conservative weekly *Junge Freiheit* was the outlet whose contents were most likely shared by party pages (even more likely than the AfD website). This fits plausibly with the above-average importance of the commentary websites *Tichys Einblick*, *Achse des Guten* (*achgut.com*), and *FreieWelt.net*.<sup>19</sup> These sources are often described as the intellectual part of the right-conservative (online) media in Germany. In contrast, intellectual reputation seems to have been less relevant for the users. They were more likely to share links from

general web portals (e.g., *web.de*, *msn.com*, *gmx.net*) and to press releases (*presseportal.de*). In addition, *PI news* and *RT Deutsch* were more important within the user messages. These sources were critically highlighted in the recent debates (the former as openly right-wing and racist, the latter as concealed Russian propaganda). It seems possible that some party communicators refrain from using such stigmatized sources, because they fear to scare off a broader electorate. Such strategic considerations might not be relevant for individual users.

#### 4. Discussion

In this research-in-brief report, I aimed to provide a quantitative overview of the (alternative) sources which were referred to in the AfD-centered Facebook discussions during the year 2016, both by party communicators and in user comments. The current debates on lack of trust in journalistic mass media, filter bubbles, and echo chambers sometimes implied that such discussions are online spheres where alternative news sources are the only information base and mainstream media outlets are not relevant anymore. The empirical reality is, as always, more complex. On the one hand, mainstream media outlets were *not* absent from these discussions, quite the contrary (see also Hurtz, 2017). *Welt* and *Focus* were by far the most frequently shared sources, and all major media outlets – even the loathed (by the AfD) public broadcasters – were represented substantially. This finding held for both party communicators and messages by individual Facebook profiles. On the other hand, many of the outlets, which are often mentioned in the

18 Two online legal digests.

19 *FreieWelt.net* is a self-described “Internet newspaper” which is published by Sven von Storch, husband of, at the time of writing, AfD board member and Member of the European Parliament Beatrix von Storch. It regularly features longer opinion pieces by AfD politicians and intellectual supporters. See <https://www.freiewelt.net/impressum/>.

debates on an alternative-right (online) media universe, were indeed highly visible on the AfD Facebook pages. They were supplemented by a variety of less well-known websites and YouTube channels, many of which on closer inspection turn out to be explicitly positioned against the (self-perceived) political and media mainstream. The comparison of relative source importance within party and user messages indicated that the AfD and its supporters preferred to use somewhat different sources. The party communicators were more likely to refer to more intellectual, conservative-right outlets; the users were more likely to share more controversial and less well-known alternative sources (see also Arzheimer, 2015). This finding suggests that user comments play a substantial part in connecting the AfD-centered information environment on Facebook with more extreme parts of the populist-right online world.

Beyond the empirical evidence, the research report showcased the advantages, but also the limitations of a quantitative, computational social science approach to investigating the use of (media) sources in online discussions. The major strengths of the current study are its broad data base and its inclusive operationalization of (media) sources. By considering all messages which were posted on a large number of AfD pages over the course of the year 2016,<sup>20</sup> I was able to provide a general overview of the phenomenon beyond occasion-driven case studies. The extraction and subsequent categorization

of all links which occurred in the messages avoided an *a priori* selection of sources. The results are more broadly applicable than those of outlet-centered designs which start by defining relevant sources and then collect only their shares and user comments. The collection of information on YouTube videos added further detail.

The study's most important analytical limitation is its disregard of the contexts and contents of the links. The analysis did not account for which user (beyond the party-user dichotomy) shared a link, what message accompanied a link, and which content a link pointed to. These limitations are starting points for further research, computational and manual, quantitative and qualitative. Quantitative-computational studies could, for example, investigate user-source networks (like in Schmidt et al., 2017) or identify patterns in the messages and linked online contents. Manual studies, quantitative and qualitative, are then needed to assess in more detail which sources are used in which way in the Facebook discussions. Such work would be able to tackle the most important substantial limitation of the present study. The simple negative definition of alternative sources was sufficient for an overview, but it is not satisfying as a conceptual definition. The diversity even within the 200 most frequently shared sources highlights the need for more sophisticated theoretical and empirical classifications. Such endeavors would certainly be worthwhile, given the ongoing public and academic interest in the role of alternative media sources in public (online) discourses.

20 Excluding of course the messages which were again deleted before the year's end, an inherent shortcoming of retrospective online research (Bachl, 2018).

## References

- Alternative für Deutschland (AfD) (2016). *Programm für Deutschland* [Manifesto for Germany]. [https://www.alternative-fuer.de/wp-content/uploads/sites/7/2016/05/2016-06-27\\_afd-grundsatzprogramm\\_web-version.pdf](https://www.alternative-fuer.de/wp-content/uploads/sites/7/2016/05/2016-06-27_afd-grundsatzprogramm_web-version.pdf)
- Arzheimer, K. (2015). The AfD: Finally a successful right-wing populist Eurosceptic party for Germany? *West European Politics*, 38(3), 535–556. doi:10.1080/01402382.2015.1004230
- Bachl, M. (2018). An evaluation of retrospective Facebook content collection. In S. Geiß, C. Schemer, T. K. Naab, C. Peter, & P. Müller (Eds.), *Dynamische Prozesse der öffentlichen Kommunikation: Methodische Herausforderungen* [Dynamic processes of public communication: Methodological challenges]. Köln: Halem. Preprint at <https://doi.org/10.17605/OSF.IO/S7CZG>
- Barberá, P., Jost, J. T., Nagler, J., Tucker, J. A., & Bonneau, R. (2015). Tweeting from left to right. *Psychological Science*, 26(10), 1531–1542. doi:10.1177/0956797615594620
- Barberá, P., Piccirilli, M., & Geisler, A. (2017). *Rfacebook: Access to Facebook API via R* (R package version 0.6.12). <https://github.com/pablobarbera/Rfacebook>
- Colleoni, E., Rozza, A., & Arvidsson, A. (2014). Echo chamber or public sphere?. *Journal of Communication*, 64(2), 317–332. doi:10.1111/jcom.12084
- Del Vicario, M., Bessi, A., Zollo, F., Petroni, F., Scala, A., Caldarelli, G., ... Quattrocchi, W. (2016). The spreading of misinformation online. *Proceedings of the National Academy of Sciences*, 113(3), 554–559. doi:10.1073/pnas.1517441113
- Donsbach, W. (1997). Media thrust in the German Bundestag election, 1994: News values and professional norms in political communication. *Political Communication*, 14(2), 149–170. doi:10.1080/105846097199416
- Forschungsgruppe Wahlen (2016, December 13th). *FGW-Umfrage Glaubwürdigkeit Medien für ZDF* [Survey on credibility of news media]. <http://www.heute.de/ZDF/zdfportal/blob/46159738/2/data.pdf>
- Gagolewski, M., & Tartanus, B. (2016). *R package stringi: Character string processing facilities* (R package version 1.1.2). doi:10.5281/zenodo.32557
- Hurtz, S. (2017, May 3rd). Auch AfD-Anhänger liken “Mainstream-Medien” [AfD supporters also like ‘mainstream’ media sources]. *Süddeutsche Zeitung* [online]. <http://www.sueddeutsche.de/digital/facebook-auch-afd-anhaenger-likern-mainstream-medien-1.3481913>
- Kemper, A. (2016, February 18th). Wie „Welt“ und „WamS“ die AfD groß machten [How the newspapers Welt and WamS supported the AfD]. *Übermedien*. <http://uebermedien.de/2068/wie-welt-und-wams-die-afd-gross-machten/>
- Keyes, O., Jacobs, J., Schmidt, D., Greenaway, M., Rudis, B., Pinto, A., ... Bezanon, J. (2016). *urltools: Vectorised tools for URL handling and parsing* (R package version 1.6.0). <https://CRAN.R-project.org/package=urltools>
- Kohrs, C. (2016, December 27th). Futter für AfD-Wähler [Media content for AfD voters]. *Correctiv*. <https://correctiv.org/recherchen/neue-rechte/artikel/2016/12/27/medien-editorial/>
- Lazer, D., Pentland, A., Adamic, L., Aral, S., Barabási, A.-L., Brewer, D., ... Van Alstyne, M. (2009). Computational social science. *Science*, 323(5915), 721–723. doi:10.1126/science.1167742
- Pariser, E. (2011). *The filter bubble. What the Internet is hiding from you*. London: Penguin.

- Ringler, N., Schacht, K., Schnuck, O., & Schöffel, R. (2016, December 8th). Rechtes Netz [Right-wing networks]. *Bayerischer Rundfunk* [online]. <http://web.br.de/interaktiv/rechtes-netz/>
- R Core Team (2016). *R: A language and environment for statistical computing*. Vienna: R Foundation for Statistical Computing. <https://www.R-project.org/>.
- Rauch, J. (2015). Exploring the alternative–mainstream dialectic. *Communication, Culture & Critique*, 8(1), 124–143. doi:10.1111/cccr.12068
- Schmidt, A. L., Zollo, F., Del Vicario, M., Bessi, A., Scala, A., Caldarelli, G., ... Quattrocioni, W. (2017). Anatomy of news consumption on Facebook. *Proceedings of the National Academy of Sciences*, 114(12), 3035–3039. doi:10.1073/pnas.1617052114
- Schweiger, W. (2017). *Der (des)informierte Bürger im Netz* [The (un)informed citizen in the Internet]. Wiesbaden: Springer.
- Sood, G. (2016). *tuber: Access YouTube from R* (R package version 0.7.0). <https://github.com/soodoku/tuber>
- Sunstein, C. R. (2001). *Republic.com*. Princeton: Princeton University Press.
- Waldherr, A., Maier, D., Miltner, P., & Günther, E. (2016). Big data, big noise. *Social Science Computer Review*, 35(4), 427–443. doi:10.1177/0894439316643050
- Wickham, H. (2016). *tidyverse: Easily install and load 'tidyverse' packages* (R package version 1.0.0). <https://CRAN.R-project.org/package=tidyverse>
- Winterbauer, S. (2016, March 18th). Kopp, Sputnik, Epoch Times & Co: Nachrichten aus einem rechten Paralleluniversum [Kopp, Sputnik, Epoch Times & Co: News from a right-wing parallel universe]. *Meedia*. <http://meedia.de/2016/03/18/kopp-sputnik-epoch-times-co-nachrichten-aus-einem-rechten-paralleluniversum/>
- Zuiderveen Borgesius, F., Trilling, D., Möller, J., Bodó, B., de Vreese, C., & Helberger, N. (2016). Should we worry about filter bubbles? *Internet Policy Review*, 5(1). doi:10.14763/2016.1.401