

UNEASY BEDFELLOWS

Comparing Diversity of German Public Service News on Television and on Facebook

News consumption has shifted increasingly to new platforms and gateways such as social network sites (SNS) with Facebook leading the way. Accordingly, journalists must cope with this “uneasy bedfellow” and provide news on Facebook to attract otherwise hard-to-reach audiences. This is even more relevant for public service broadcasters (PSBs), whose mission is to serve the interests and needs of every citizen. Bound to their public service mission, PSBs have to generally fulfil specific normative requirements such as diversity within their coverage, particularly to a higher degree than their commercial counterparts. Consequently, these requirements should be transferred to public service online supply in general and to public service supply on platforms such as Facebook. Whereas these demands have at best been roughly discussed, they have not been investigated so far. Therefore, we conducted a content analysis of the most viewed public service and commercial German TV newscasts and their respective Facebook sites, and analyzed whether public service news outperform commercial news on Facebook and whether they perform as good as on TV in terms of diversity (diversity of issues and of people and groups). Results show that public service news on Facebook show an even slightly higher performance than on TV.

KEYWORDS

diversity; Facebook; Germany; news consumption; public service broadcasting; quantitative content analysis

Introduction

During recent years, news consumption has changed significantly. An increasing number of – particularly young – people perceive the Internet as their main source of news. Furthermore, they increasingly turn towards social network sites (SNS) such as Facebook to find information (Newman et al. 2017). Despite cross-national differences – the importance of social media as a news source is greater in “weaker” media systems (Hölig and Hasebrink 2016; e.g., 69% weekly usage of Facebook for news in Romania: Newman et al. 2017, 89) – there is a noticeable trend towards Facebook becoming an integral part of the news media repertoires (Newman et al. 2017; for comparison, see Nielsen and Schröder [2014] with overall lower numbers at this point of time). Even in Germany, where the share of people using Facebook as a news source is rather small compared to many other countries, a total of 25% – and even 34% of people younger than 25 years – use Facebook at least once during the previous week for news (Hölig and Hasebrink 2017, 40-41). Even though relatively few Germans use social media as their main (7%) or their only news source (2%) (Hölig and Hasebrink 2017, 23), social media have become increasingly important for news consumption, with Facebook leading the way (see also Müller, Schneiders, and Schäfer [2016]).

Hence, to stay competitive and still reach the entire public, traditional mass media must go beyond providing a website and offer content on SNS (Bell 2016; Sehl, Cornia, and Nielsen 2016). This is even more relevant for public service broadcasters (PSBs) that derive their legitimization from reaching every societal group – also including the small group of people largely relying on Facebook to consume news. Besides the general necessity to provide news on social media, the content provided by PSBs should also fulfil normative requirements, with diversity being a particularly pivotal criterion. Although initially developed in the context of the traditional “offline” broadcasting program, this normative requirement is important in the digital environment as well. The assumption that the pure expansion of media outlets and online content brings along increased diversity is too simple, as catchphrases such as “more of the same” and “homogenization” suggest. Therefore, it is important that established mass media such as PSBs provide diverse content online.

Even though PSBs have generally committed themselves to their normative standards including diversity in terms of their websites (e.g., ZDF 2006), this commitment does not yet include Facebook – which corresponds to the general remark that media companies do not seem to have a clear strategy on platforms such as Facebook (Hille and Bakker 2013, 677). As there is a general lack of empirical studies analyzing public service content distributed online – especially on SNS –, there is a great need to investigate how normative requirements, such as diversity, are fulfilled on third-party platforms such as Facebook.

Through a quantitative content analysis, we analyze the diversity of the news published on the Facebook sites of the main newscasts of two German PSBs (*ARD tagesschau*, *ZDF heute*) and compare it (1) with the diversity of commercial news (*Sat.1 Nachrichten*, *RTL Aktuell*) on Facebook and (2) with public service news on television. (3) Besides, we analyze individual TV newscasts and Facebook sites. Concerning our research interest, Germany is an interesting example due to the strong position of PSBs on the television market. Below, we first explore possible differences in diversity between types of broadcasters, content distribution platforms, and distinct programs theoretically and derive research questions. Afterwards, we explain our methods, present our results and finally discuss the implications and limitations of our study.

Theoretical framework

Diversity as an Important Concept for Democracies and Public Service Programming

Diversity is highly important for a well-functioning democracy with respect to several aspects. Originally, the idea arises from ecological considerations concerning different species diversifying and thereby enriching our life. Correspondingly, the measurement of diversity can be traced back to ecological studies (Junge 1994). Beyond the ecological perspective, diversity is regarded as an undisputable general aim of societies: Exchanging different ideas and perspectives can help finding the truth (Mill 1956), solving social conflicts in society (McQuail 1992), and stimulating “popular wisdom [which] can only flourish in a society where diverse ideas and opinions flow freely” (Donohue and Glasser 1978, 592). Empirical studies (e.g., Scheufele et al. 2006) confirm this general suggestion that being exposed to diverse viewpoints has “procivic outcomes” (Scheufele et al. 2006, 744), such as more political participation or more political knowledge. Therefore, diversity is an integral part of Western democracies, both in the United States (Holmes 1919) and in the European Union whose motto “United in diversity” (European Union 2017) symbolizes the enrichment by different languages, cultures and traditions, leading to the integration of all European citizens.

In today’s information society, diversity plays an important part as well. As mass media serve as a pivotal source of information and forum for public discourse, they are – from a normative point of view – responsible for delivering diverse content. Particularly important is on the one hand *diversity of issues* – that is, they should inform people about a wide range of issues, including niche topics. On the other hand, media should include people from many different societal groups giving a statement or expressing an opinion (*diversity of people and groups*), thus making these diverse societal groups visible in their coverage and provide the basis for viewpoint diversity. They thereby enable citizens to be well-informed about different issues and opinions and thus take part in the public discourse and information society as a whole. This is even more relevant for PSBs, whose mission includes fostering social integration and serving the interests and needs of every citizen or societal group, which is also the basis for their legitimation (Serong 2011). Therefore, diversity is considered as an important part of public service programming (Trappel 2008) and corresponding media policy guidelines.

In Germany, these guidelines are largely based on the decisions of the German Constitutional Court (“Bundesverfassungsgericht”) that has always judged public service broadcasting as essential for opinion formation. Accordingly, the Constitutional Court has repeatedly required PSBs to guarantee the basic supply (“Grundversorgung”) and thereby provide internal pluralism (“Binnenpluralismus”): Every single broadcaster must provide diverse content. Compared to that, the requirement of external pluralism (“Außenpluralismus”) addressed to the commercial broadcasters that entered the German market in the mid-1980s, is much less challenging. The requested diversity is only required by the entity of all commercial broadcasters (Czepek, Hellwig, and Nowak 2009, 237). Contrary to these normative assumptions, however, empirical studies investigating newscasts indicate a higher diversity for commercial than for public service news (e.g., Maurer 2005; Vehlow 2006). To a large degree, these differences can be explained by a stronger political focus of PSBs (see also Leidenberger [2015, 183]) which, on the other hand, is desirable from a democratic theory viewpoint since comprehensive political coverage is an important precondition for well-informed citizens. This points to the relativity of diversity: Higher diversity is not necessarily positive. With a view to the PSBs’ educational mandate, a stronger concentration on politics might be desirable to a certain degree. Nevertheless, informing people about politics is not sufficient. Particularly PSBs should cover different aspects and societal groups. This holds true especially in these times where digitization renders the entire world, its different voices and issues accessible to everyone.

Diversity in the Digital (News) Environment

Since the establishment of the Internet and the digitization of the information environment, the public discourse has been shaped by both great hopes and great fears. On the one hand, the Internet provides unlimited space, and almost everybody – not only media companies – is able to publish information. With lowered barriers, the amount of news websites and outlets has significantly risen and with it the amount of alternative weblogs and news sources forming “the long tail” (Anderson 2006). However, although these websites in their entirety might include an unlimited range of topics and opinions and thus provide a high degree of diversity altogether, there are several obstacles running counter diverse news consumption and a diversely informed citizenry.

These include that the Internet is still dominated by the “winners-take-all” pattern (Hindman 2007, 339): Only few websites – often established brands in the offline world expanding into the Internet – are largely referred to by hyperlinks from other websites and are thus highly visible online, while alternative news websites, such as online-only outlets, do not receive much attention. Thus, despite the increasing importance of the Internet as a news source, many peoples’ news repertoires still focus strongly on well-known brands of the offline world (Newman et al. 2017) whereas alternative news sites such as weblogs are only used by a very low percentage of people (Hasebrink and Schmidt 2013). As a result, it is questionable whether the theoretically high (external) supply diversity can be transferred to high exposure diversity (Napoli 1999; van der Wurff 2011). In terms of SNS, the diversity of supply is all the more important as the algorithmic influence – based on inter alia prior usage and user preferences (DeVito 2017) – on what every single user sees within the personalized content of the news feed may additionally limit the perceived diversity (Newman et al. 2016). Overall, exposure diversity greatly depends on the supply diversity of the respective (limited) set of (online) news outlets. Instead of relying on the broad range of news outlets, research should thus focus on internal program diversity, which continues to be highly important.

However, to date, research into content diversity of online media outlets has been rather scarce. This applies even more to studies focusing on public service content online. Overall, studies indicate a slightly higher diversity online when compared to their offline counterparts, but often do not find great differences or uniform trends (e.g., Jacobi, Kleinen-von Königslöw, and Ruigrok 2016; Oschatz, Maurer, and Haßler 2014; Powers and Benson 2014). Besides, Neuberger and Lobigs (2010) identify the potential of online outlets to increase cross-media supply diversity.

Beyond such offline-online comparisons, another branch of content diversity research focuses on online media. Respective studies thereby employ different approaches: On the macro level, they investigate the influence of types of ownership or countries (Humprecht and Esser 2017) or they compare “traditional” online news with alternative types of online news or news from online-only outlets (Carpenter 2010; Humprecht and Esser 2017; Neuberger and Lobigs 2010). They may also evaluate whether online comments expand articles’ viewpoint diversity (Baden and Springer 2014). Regarding the news performance of PSBs, Humprecht and Esser (2017) find out that PSBs provide the highest diversity – although on an overall low level. Moreover, diversity has recently been measured in the “European Media Pluralism Monitor” (Valcke, Sükösd, and Picard 2015), but on a very superficial level, based on different structural indices instead of media content. However, although sometimes being part of cross-media analyses (e.g., Oschatz, Maurer, and Haßler 2014; Seethaler 2015), studies on diversity focusing on public service online content are still lacking, as far as we know.

Besides, it is unclear which demands are required by PSBs in the online context, where their new economic competitors pressurize their traditional normative obligations (Tambini 2015) such as diversity. Diversity is hereby discussed on a rather abstract level within the general debate about public value (Ruß-Mohl 2013) provided online. However, this debate focuses more strongly – from an economic point of view – on how public service programs threaten commercial programs and how PSBs should thus be limited (Donders and Pauwels

2008; Katsirea 2011) instead of concentrating on how PSBs can contribute to a healthy democracy by delivering diverse content. Instead of analyzing the public service content provided online, research even goes one step further, asking how the role of PSBs can focus even more on (news) consumer navigation (“nudging”: Burri 2016) and thus be almost newly defined. Although these considerations are important in today’s environment, characterized by information overload (e.g., Eppler and Mengis 2004; York 2013), they should extend rather than replace the traditional mission of PSBs.

Diversity in the Social Network Environment

This is even more important as PSBs have since expanded their online activities to third-party platforms (Doyle 2010: “multi-platform strategy”), particularly to SNS, with Facebook leading the way. PSBs largely agree that they should generally adapt to changing news consumption patterns described above (Sehl, Cornia, and Nielsen 2016) and make an effort to “reach the public where the public is” (Moe 2013, 120). Or, as Daniel Wilson from BBC puts it: “It’s all publicly funded content, everyone should have access to it everywhere” (cited in Sehl, Cornia, and Nielsen 2016, 30). The inclusion of SNS in their content distribution strategy firstly addresses otherwise “hard-to-reach groups”, consisting of – above all – young people and people who would avoid news if they did not stumble over them on social media (BBC 2004; Sehl, Cornia, and Nielsen 2016).

As a result, broadcasters – particularly PSBs – find themselves in a dilemma: On the one hand, they are obliged to fulfil their normative mission to inform, educate and entertain people and thereby serve democracy. On the other hand, they are forced to adapt to the highly commercialized SNS, whose aim is to satisfy *consumers* instead of *citizens* and who therefore do not follow normative principles (van Dijck and Poell 2015). Hence, normative standards such as diversity come into conflict with commercial aims including popularity and salability. That is why van Dijck and Poell (2015, 152) label the social media providers as “uneasy bedfellows” of PSBs. Moreover, since the selectivity of algorithms (Bucher 2012) and users threaten to limit the diversity of the visible and consumed news content on SNS, the diversity of content supply is even more important. The altered circumstances and the lacking self-commitment of SNS to normative standards raise the question how diverse (especially public service) news on Facebook are – a question that has, as far as we know, not yet been investigated.

Dimensions of Diversity

Generally, diversity can be understood as the representation of a wide range of different characteristics of society in media coverage (McQuail and van Cuilenburg 1982; Rössler 2008). As a multidimensional concept, diversity is usually measured by several indicators reflecting different aspects of diversity. Guided by van Cuilenburg (2007, 32), our conceptualization includes two main criteria¹: diversity of issues² and diversity of people and groups.

Diversity of issues represents the range of issues being published³. This dimension has its empirical roots in early studies focusing on the diversity of different program genres (e.g., Brosius and Zubayr 1996; Donsbach and Dupré 1994; Krüger 1992), but also plays a major role in subsequent studies analyzing news diversity (Leidenberger 2015; Maurer 2005). The importance to analyze the diversity of issues with respect to public service news results from their public service mission to provide people with content from different areas of society to create the basis for a well-informed citizenry. Besides, PSBs must serve the society as a whole on whose acceptance their legitimation is based. As different groups of society are interested in different issues, news media should, according to Graber (2003, 147), “be a smorgasbord, rather

than a hearty one-course meal”, that is, they should serve different thematic interests adequately.

Similar justification can be found for *diversity of people and groups*⁴. As PSBs derive their legitimization from representing the entire society and from fostering social integration, each societal group should be given the same opportunity to express its opinion, and thus being visible in the public discourse – a principle also known as *diversity as access* (McQuail 1992). Whereas the liberal model of democratic theory mainly demands a diverse representation of “important” societal voices (mainly politicians from different parties) in order to build a bridge to the public, the deliberative model rather focuses the representation of different interest groups in society such as NGOs (Jandura and Friedrich 2014). Mainly based on the latter normative background, we see the necessity for giving access not only to politicians, but also to people and groups from other societal spheres such as economy, interest groups, and even ordinary citizens – whereas this latter aspect is, above all, important from the perspective of the participatory model of democratic theory (Strömbäck 2005). Hence, an ideal level of diversity is delivered if every of the above mentioned societal group can express its opinion to an equal degree. New voices, and with that new ideas, can thus become more visible and bring about social change (McQuail 2007).

Thus, we follow the concept of *open diversity* with respect to both dimensions. This concept aims for an equal visibility of every societal group, while *reflective diversity* bases the ideal distribution on the real-world distribution – that is, large and powerful societal groups who dominate the public discourse should be given a respective platform within media coverage (McQuail 2007). Based on these considerations, our study compares diversity of issues as well as diversity of people and groups between (1) public service and commercial news on Facebook, (2) public service news on Facebook and on TV, and (3) the four broadcasters under investigation. This leads to the following research questions:

RQ1: Are public service news on Facebook more or less diverse than commercial news on Facebook in terms of issues reported on (RQ1a) and societal groups giving a statement or expressing an opinion (RQ1b)?

RQ2: Are public service news on Facebook more or less diverse than public service news on TV in terms of issues reported on (RQ2a) and societal groups giving a statement or expressing an opinion (RQ2b)?

RQ3: How do individual TV newscasts and Facebook sites differentiate from each other in terms of issues reported on (RQ3a) and societal groups giving a statement or expressing an opinion (RQ3b)?

Method

Sample

To answer our research questions, a quantitative content analysis of the four most viewed German TV newscasts (Zubayr and Gerhard 2015) was conducted: two public service newscasts – *tagesschau* (broadcaster: *ARD*) and *ZDF heute* (*ZDF*) – and two commercial newscasts – *RTL Aktuell* (*RTL*) and *Sat.1 Nachrichten* (*Sat.1*). The sample includes these four broadcasters’ TV newscasts and official Facebook sites.

We focus on routine coverage that is often neglected in political communication research and randomly selected one artificial week (seven days) within a six months period (10th April to 10th October 2014). To guarantee the greatest possible comparability between TV and Facebook concerning the real world events, the collection of material on Facebook followed the time of transmission of the respective TV newscast. For example, in case of a TV newscast on 30th May from 8 to 8.15 pm, all posts on the respective Facebook site posted between 29th May, 8.16 pm, and 30th May, 8.15 pm were included in the sample.

The sample comprises 369 TV news reports (7 hours and 43 minutes of TV content) from 28 TV newscasts and 283 Facebook posts (34 of the initially 317 posts had to be excluded as they only hinted to the following TV newscast or included an invalid hyperlink). Since the study aims to find out what is provided by the broadcasters rather than what is read or watched by the audience, the entire TV news reports and the entire Facebook posts including supplemental content (e.g., a linked article on the broadcaster's website or an included video) serve as units of analysis (for an overview of the sample see Table 1).

Table 1 near here

Measurement

Issues. This indicator is defined as the range of different issues – oriented towards the classical newspaper sections or the classical news genres⁵ (e.g., politics, economics, sports, science, human interest). Each news item was assigned to one of these issues. In ambiguous cases, coding was based on the news item's main emphasis. For example, if an article about a new law focused on economic consequences, the article was coded as an economic issue, but if the diverse opinions from different parties were emphasized most strongly, the article was coded as a political news item.

People and groups. This indicator is defined as the visibility of different societal groups expressing their opinion or issuing a statement. Thus, every person or institution who provided a statement, expressed an opinion, or was at least (indirectly or directly) quoted, was coded and assigned to a societal sphere⁶ (e.g., political system, economic system, citizenry) (Maurer 2005, see also Masini et al. [2017]). This dimension of diversity is a necessary precondition for viewpoint diversity, that is, a great variety of different arguments.

Diversity index. To compare the diversity of issues as well as people and groups between the platforms, types of providers, and individual broadcasters, we calculated the standardized entropy, based on Shannon's H (Shannon and Weaver 1949), for each outlet and both indicators. Shannon's H is theoretically based on the concept of open diversity. It is sensitive to the amount of categories and evenness but is mathematically robust regarding small samples (Kambara 1992; McDonald and Dimmick 2003). Standardizing the values on the basis of the total amount of categories of each dimension eliminates the former influence. The standardized entropy ranges from 0 (concentration on only one aspect; lowest possible diversity) to 1 (completely even distribution; highest possible diversity). To compare the overall diversity of individual outlets, we calculated the mean value of both indicators for each outlet, whereby the entropy values of both indicators are weighted equally. To compare platforms and types of broadcasters we calculated the mean value of the corresponding outlets.

Reliability

Coding was done by one coder. The intra-coder-reliability (Krippendorff's α) was high and ranged between 1.00 for formal variables (allocation to specific TV newscast or Facebook site and day of examination), 0.93 for the assignment of people or institutions giving a statement to a societal sphere, and 0.81 for issues.

Findings

The current analysis proceeds in three steps: After comparing the diversity of public service and commercial Facebook news (*RQ1*), we compare the diversity of public service news on Facebook with the diversity of public service TV news (*RQ2*). Finally, we shed light on the diversity of each broadcaster's news supply on TV and on Facebook (*RQ3*).

Diversity of Public Service and Commercial News on Facebook

On Facebook, the diversity of issues (*RQ1a*) is lower for public service news than for commercial news (Table 2) since the former place greater emphasis on politics on average (see also Table 4 in the appendix). The same is true for the diversity of people and groups (*RQ1b*). In other words, diversity on Facebook is significantly higher for commercial than for public service news. On average, the former report on issues as well as people and institutions from different societal spheres in a more balanced fashion than public service providers do. Consequently, the overall diversity of the commercial Facebook sites is higher than the diversity of the public service Facebook sites (*RQ1*).

Diversity of Public Service News on TV and on Facebook

Table 2 also compares the diversity of public service news on TV and on Facebook. While diversity of issues is higher on TV (*RQ2a*), public service news on Facebook significantly outperform those on TV in terms of diversity of people and groups (*RQ2b*). In other words, although the focus on politics is even slightly higher on Facebook, there are more speakers from different societal groups on Facebook (see also Table 5 in the appendix), resulting in a slightly higher overall diversity index for SNS (*RQ2*).

Table 2 near here

Diversity of Individual TV Newscasts and Facebook Sites

In contrast to their commercial counterparts, PSBs are required to provide internal diversity – that is, each broadcaster should deliver diverse news coverage on each platform. Therefore, we compare the individual TV newscasts and Facebook sites of each broadcaster (Table 3; see also Table 4 and 5 in the appendix). At first glance, the lowest overall entropy value of the *tagesschau* TV newscast and the highest overall entropy value of *RTL Aktuell* both on TV and on Facebook are most striking. These results can be explained by the focus on politics: The *tagesschau* TV newscast strongly focuses on political coverage, which decreases both its diversity of issues (almost 50% political issues) and particularly its diversity of people and groups (about 70% politicians). Compared to this, the diversity of people and groups on the *tagesschau* Facebook site – with “only” a bit more than 50% of politicians included – clearly outperforms the respective diversity on TV. Although the *tagesschau*’s diversity of issues is lower on Facebook – primarily due to an even slightly higher share of political issues and the complete lack of weather and sports news on this platform –, the clearly higher diversity of people and groups leads to a higher overall diversity index on Facebook compared to TV for the *tagesschau*. In contrast to the *tagesschau* newscast, *RTL Aktuell* shows a much lower focus on political issues, a higher focus on soft news, and more attention to people and groups from diverse societal systems, including quite a great deal of ordinary people. These results, again, point to the fact that the diversity requirement might conflict with other media performance indicators such as relevance. Stronger political focus not only decreases diversity, but might also increase relevance and thereby provides better conditions for the citizens’ political information. Therefore, lower diversity is not necessarily negative and can thus comply with PSBs’ obligations.

Contrary to the *tagesschau*, *ZDF heute* news provide an almost equally high internal diversity on Facebook and on TV with a similar pattern of news coverage on both platforms. This particularly includes the almost equal share of political news (TV: 37%, Facebook: 39%) whereas there are few issues – for example sports (higher share on TV) as well as human interest

(higher share on Facebook) with a clearly difference in visibility. Being more diverse than *tagesschau* on both platforms – primarily due to a lower focus on politics and partly due to more soft news (especially on TV) –, *ZDF*'s newscast does not reach the diversity level of both commercial newscasts on TV and of *RTL Aktuell* news on Facebook. The platform difference of the *tagesschau* therefore predicts the overall platform difference of public service news – with a slightly higher diversity on Facebook than on TV.

Comparing commercial news on both platforms, the individual diversity results cancel each other out. Whereas the already high internal diversity of *RTL Aktuell* is even higher on Facebook, *Sat.1 Nachrichten* shows a reversed tendency, accounted for by different strategies on both platforms. While the TV newscast is similar to the other commercial newscast, *RTL Aktuell*, with a comparably low focus on politics and a large share of soft news, the Facebook site rather resembles the public service counterparts with a strong focus on political issues and politicians and with it a clearly lower diversity of issues and of people and groups. Besides, the number of postings is remarkably low – mostly at the expense of soft news – and the Facebook posts are often linked to the website of *n24*, a news channel belonging to the same channel family as *Sat.1*. Thus, it is acknowledged that *Sat.1 Nachrichten* only invests as many resources as needed on Facebook – but nothing more.

Table 3 near here

Discussion

Starting point of the current study were the changes of the media landscape and the news consumption in the digital age that have also altered the requirements for PSBs. In order to fulfil their mission of reaching society as a whole – including young people who increasingly consume news (only) on the Internet –, they have not only started providing news on their own websites but have even gone one step further publishing news on SNS such as Facebook. Whereas the discussion about normative requirements for journalistic – and especially public service – online content generally lacks concreteness revolving around the catchphrase “public value”, the centrality of diversity as a core principle of democratic societies and therefore of the public service mission is non-controversial. Therefore, the requirements of a higher program diversity for PSBs compared to their commercial counterparts on television that have been repeatedly stated by the German Federal Court (BVerfG 1986, 1987) should also apply to the new distribution platforms. However, the discussion about diversity hardly refers to content published on third-party platforms such as Facebook by now.

Based on these considerations, the current study compared the diversity of German public service and commercial news on TV and on Facebook. Results show that, in contrast to normative demands, commercial news are somewhat more diverse than public service news on Facebook (*RQ1*) – a pattern that can be also found for television news to an even larger extent. Moreover, the comparison of public service news on different distribution platforms reveals that diversity of people and groups (*RQ2b*) is higher on Facebook, while diversity of issues (*RQ2a*) is lower on Facebook – resulting in a somewhat higher diversity index for Facebook (*RQ2*). Regarding the requirement of both PSBs to deliver internal diversity, *RQ3* addresses the comparison of individual broadcasters on TV and on Facebook. Results show that while *ZDF heute* provides a comparatively rather high diversity on TV and on Facebook, the diversity values of the *tagesschau* are much lower and differ between TV and Facebook – with a higher value for the latter platform. Regarding the commercial providers, the diversity of *RTL Aktuell* is comparatively high on both platforms whereas the diversity of *Sat.1 Nachrichten* is higher on TV. Being rather similar to the issue profile of the *tagesschau* Facebook site, the comparatively low diversity of the *Sat.1 Nachrichten* on Facebook thereby shortens the gap between public service and commercial news diversity on this platform. In other words, there

are several broadcasters with specific news profiles rather than monolithic public service and monolithic commercial broadcasting.

Comparing public service and commercial news on Facebook (*RQ1*) has shown that, despite less strict diversity requirements for commercial providers, these providers still outperform their public service counterparts – in accordance with our comparison on TV and previous analyses of newscasts (e.g., Maurer 2005; Vehlow 2006) that seem to remain valid in the digital age and with respect to Facebook. This result can be interpreted in several ways: Either PSBs still perform worse than desired – on TV and on Facebook – or they perform reasonably, but commercial broadcasters perform better than expected. As there is no objective benchmark from which news supply is sufficiently diverse this is difficult to evaluate and thus cannot be answered in a satisficing way. Besides, the difference can be primarily attributed to the comparatively low diversity value of the *tagesschau* and the significantly higher one of *RTL Aktuell* whereas *Sat.1 Nachrichten* rather shortens the gap between both groups.

Moreover, the lower diversity of public service compared to commercial news – or rather *RTL Aktuell* – on Facebook can be explained to a certain degree by their strong focus on politics. This might point to the fact that PSBs also attach attention to other normative requirements that might conflict with diversity – for example relevance, another pivotal principle of normative journalistic quality (Jandura and Friedrich 2014; McQuail 1992). Diversity aims at a broad range of content, while relevance aims at identifying and emphasizing the most important content: Some (often political) issues (e.g., new or changed laws) are by nature more relevant than others (e.g., human interest) because possible resulting developments initially affect every citizen's life. Thus, the PSBs' – particularly the *tagesschau*'s – supposed deficit of diversity can be interpreted as a benefit of relevance compared to the commercial broadcasters – or rather compared to *RTL Aktuell*. Nevertheless, the public service mission is not reduced to informing people about relevant content, but explicitly includes entertaining people and serving the interests of all societal spheres to contribute to an integrated society. Thus, strictly following the diversity requirement, also soft news – albeit being less relevant – contribute to a diverse news coverage. Future studies should therefore include both requirements to gain a complete picture.

Besides, it would be interesting to see whether a higher political focus for public service news leads to a higher diversity of political issues. A recent study on political online news across nations (Humprecht & Esser 2017) suggests that public service news provide indeed a somewhat higher diversity. As we conducted a cross-issue analysis – due to our focus on the general diversity of news coverage – we were not able to measure diversity with respect to political news on a quantitative basis. However, our data give us a hint that diversity of political issues might be slightly higher within public service news for both platforms. Further studies should analyze whether this suspicion holds true and measure diversity on a more detailed level, for example, based on different policies (e.g., financial policy or defense policy) and levels of policy (regional, national, international) or based on party membership (Jacobi, Kleinen-von Königslöw, and Ruigrok 2016) as an indicator for the diversity of people and groups. Additionally, this latter indicator comes close to a suitable measurement of viewpoint diversity in terms of controversial political issues.

Restricting the analysis to PSBs (*RQ2*), the finding that public service news are somewhat more diverse on Facebook gives hope that public service providers still follow their mission – regardless of the distributing platform. This is particularly important in the light of the general trend of declining news quality and increasing softening of news on Facebook (fög 2017). Whereas both of them have a higher share of human interest news on Facebook, they also show an even little increased share of political issues. Altogether, the diversity of issues is somewhat lower on Facebook – due to the platform difference of the *tagesschau*. Nevertheless, both public service providers are far away from only concentrating on soft news on Facebook and from completely bowing down to their “uneasy bedfellow”. Besides, reaching more people with

slightly more soft news and at the same time drawing their increased attention to (normatively) relevant news such as political issues (Lischka & Werning 2017) could be a promising strategy. Research should keep an eye on this balance of adapting to the audiences' news preferences on the one hand and sticking to their own normative principles on the other hand.

Whereas the diversity of issues is somewhat lower on Facebook on average, the diversity of people and groups is even higher than on TV. That is, public service providers – or rather the *tagesschau* – contribute to a more diverse news coverage on Facebook than on TV. Being quite concentrated on politicians on TV, the *tagesschau* presents more diverse speakers from different societal groups on Facebook and thereby adds value to news coverage on Facebook. Apart from the slightly higher overall diversity value, both *ARD*'s and *ZDF*'s news on Facebook show a higher amount of speakers than on TV. A possible explanation for this result is the available space: While TV news reports can take a few minutes at a maximum, the space for an online article linked on Facebook is potentially unlimited. Whereas commercial news also include more speakers on Facebook compared to TV – regarding the absolute number (only *RTL Aktuell*) and in relation to the number of news items –, their platform difference is clearly smaller. Thus, PSBs seem to make use of this better precondition to a larger degree than commercial broadcasters do.

Altogether, the results show that users who increasingly consume their news on Facebook are provided with relatively diverse news. Despite differences between individual news outlets, this is not only true for public service providers but also for commercial providers even though not being bound to the requirement of internal diversity in contrast to PSBs. With respect to public service news, consuming news on Facebook and thereby clicking on linked articles even leads to a potentially higher exposure diversity. Within these online articles of theoretically unlimited length, users are provided with statements and opinions from many different people and groups and thus with an at least potentially higher viewpoint diversity. Whether this promising assumption of a higher viewpoint diversity holds true should be part of future studies. Regarding the launch of *Instant Articles* and more and more news exclusively edited for the Facebook environment – replacing hyperlinks to website articles –, research should keep an eye on this development and continuously evaluate whether the comparatively high diversity of people and groups within public service news on Facebook persists in the future.

Besides, future research should also analyze content diversity on a more detailed level – on TV and on Facebook – including many different informational aspects (e.g., Geiß 2015; Haßler, Maurer, and Oschatz 2014) and viewpoints being fruitful for the well-informed citizenry for both political and non-political issues. In this context, the overall higher number of speakers within public service news on Facebook compared to TV gives us a hint that PSBs might deliver higher diversity on a more detailed level on Facebook – that is, including different members of NGOs, different politicians or ordinary citizens with different viewpoints. However, this is just a simple shortcut which has to be empirically investigated.

Naturally, our study has some limitations. To start with, examining an artificial week to avoid possible biases due to dominant incidents during the period investigated comes at the price of analyzing diversity at a relatively abstract level. This prevents a detailed analysis of specific informational aspects or arguments which would – on top of analyzing the diversity of people and groups – allow an appropriate measurement of viewpoint diversity. Further studies should enrich our findings in this way. This can be done best in case studies on single issues (e.g., Benson 2009; Masini et al. 2017; Voakes et al. 1996) – whereas these results, however, are by far less generalizable than ours are.

Another limitation is the restriction to the German media market. Cross-national comparisons with other countries with strong PSBs, such as Great Britain or Austria, but also countries with weak PSBs such as the U.S. (Hallin and Mancini 2004) could be helpful to generalize our findings.

Moreover, our study focuses on the supply and dismisses the demand, even though content diversity is nothing but a precondition for exposure diversity (van der Wurff 2011) – as shown by the “diversity chain” (Napoli 1999) – and an informed opinion formation. In other words, even the most diverse news supply by no means ensures that it actually reaches the user – which is even more relevant in today’s news environment, being full of information, and increasingly leaving the news consumers in charge of what is actually consumed. Algorithmic selection and personalized newsfeeds, such as on Facebook, have intensified the related challenges. Therefore, a complete picture dealing with both “diversity as sent” and “diversity as received” (McQuail 1992) is needed. Future studies should thus combine the results of our analysis and other content-based studies with findings of news consumption studies and bring both types of data in relation on the level of individual users. Additionally, future content analyses should differentiate between which informational aspects and speakers appear within Facebook posts and which ones appear only in the linked article. This would shed light on the degree of possible exposure diversity for users who only scan their newsfeeds.

Besides, being cross-sectional, our study provides only a snapshot. Nevertheless, our results provide a valuable starting point for a continuous monitoring in the future. This is all the more important in times of algorithm-driven personalized newsfeeds. The role of information intermediaries such as Facebook for news supply and consumption develops rapidly and dynamically as, for example, the recent discussion on Facebook’s *Instant Articles* shows (Bell 2016). In light of these developments, the obligations of PSBs should be reconsidered in times of digitization. Former genre boundaries are now crossed due to technological convergence. Accordingly, media regulations and normative requirements such as diversity should no longer be reduced to specific platforms. Therefore, some authors propose to broaden the label “PSB” to “Public Service Media” (PSM) (e.g., van Dijck and Poell 2015). With the presumably further increasing competition on the media market in mind, communication research should carefully monitor whether mass media, and especially PSBs, lose sight of their traditional normative requirements and bow down to their “uneasy bedfellows” one day.

NOTES

1. Van Cuilenburg (2007) also mentions two other criteria. The first is *diversity of content*, which refers to the diversity of detailed information units or opinions of specific events or issues. This indicator can only be measured when running case studies and is therefore not applicable to our study. Besides, the author mentions diversity of *geographical coverage* and *relevance* (i.e., local, regional, national and international media content), whereby we consider both aspects to be less important regarding the informing and integrating mission of public service broadcasting when compared to the analyzed dimensions (diversity of issues, diversity of people and groups).
2. Van Cuilenburg (2007) also included *diversity of formats* in this dimension. This aspect refers to different program genres and is not applicable to an analysis of newscasts.
3. This dimension has to be distinguished from the diversity of news events (e.g., Beckers et al. 2017) or the diversity of individual aspects within coverage of an issue (e.g., Choi 2009).
4. This is comparable to the concept of actor diversity (e.g., Masini et al. 2017).
5. Altogether, the codebook included 14 possible news genres: 1. politics, 2. economy, 3. society/ justice, 4. science, 5. culture/ cultural events, 6. religion/ church, 7. nature/ environment, 8. accidents/ catastrophes, 9. crime, 10. human interest/ everyday life, 11. sports, 12. weather (forecast), 13. consumer advice issues, 14. Internet/ new communication technologies.
6. Altogether, the codebook included six societal spheres: 1. political system (politicians), 2. citizenry (ordinary citizens), 3. sociocultural system (e.g., VIPs, artists, sportsmen, media/

journalism, science/ experts); 4. administrative system (public institutions e.g., schools, hospitals, the police), 5. interest groups/ NGOs, 6. economic system.

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TABLES

Table 1: Sample

	<i>tagesschau</i> (ARD)	<i>ZDF heute</i> (ZDF)	<i>Sat.1 Nach- richten</i> (Sat.1)	<i>RTL Aktuell</i> (RTL)	Total
TV Number of news items (duration in sec)	85 (5,991)	87 (7,168)	87 (6,395)	110 (8,281)	369 (27,835)
Facebook Number of postings (incl. linked articles)	65	73	45	100	283

Table 2: Diversity of public service and commercial news on Facebook (FB) and on TV

<i>Mean of standardized entropy</i>	Public service news on FB (tagesschau, ZDF heute) (n=138)	Commercial news on FB (Sat.1 Nachrichten, RTL Aktuell) (n=145)		Public service news on FB (tagesschau, ZDF heute) (n=138)	Public service news on TV (tagesschau, ZDF heute) (n=172)		Commercial news on TV (Sat.1 Nachrichten, RTL Aktuell) (n=197)
Diversity of issues	.68	.73**	t (346.7)= -5.03 p=.00	.68	.72**	t (269.7)= 7.41 p=.00	.79
Diversity of people and groups ¹	.78	.82**	t (223.8)= -6.84 p=.00	.78**	.70	t (209.2)= -9.47 p=.00	.86
Index diversity	.73	.77**	t (288.2)= -5.83 p=.00	.73**	.71	t (319.5)= -3.54 p=.00	.82

*values differ significantly at the 0.05 level

** values differ significantly at the 0.01 level

¹ number of speakers: public service news on Facebook: n=605; commercial news on Facebook: n=504; public service news on TV: n=339; commercial news on TV: n=419

Table 3: Diversity of individual TV newscasts and Facebook (FB) sites

<i>Standardized entropy</i>	<i>tages-schau TV</i> (n=85)	<i>ZDF heute TV</i> (n=87)	<i>Sat.1 Nachrichten TV</i> (n=87)	<i>RTL Aktuell TV</i> (n=110)	<i>tages-schau FB</i> (n=65)	<i>ZDF heute FB</i> (n=73)	<i>Sat.1 Nachrichten FB</i> (n=45)	<i>RTL Aktuell FB</i> (n=100)
Diversity of issues ¹	.69	.75	.78	.79	.61	.75	.62	.83
Diversity of people and groups ^{1,3}	.57	.82	.85	.87	.76	.80	.74	.90
Index diversity²	.63	.79	.82	.83	.69	.78	.68	.87

¹ The values listed represent individual standardized entropy values (based on the cross-tabulation of the respective news supplier and diversity dimension) and no mean values. Therefore we do not run any variance analysis and thus do not indicate any indicators for statistical significance.

² Every diversity value differs significantly ($p=.00$) from the other ones.

³ number of speakers: tagesschau TV: n=161; ZDF heute TV: n=178; Sat.1 Nachrichten TV: n=197; RTL Aktuell TV: n=222; tagesschau Facebook: n=284; ZDF heute Facebook: n=321; Sat.1 Nachrichten Facebook: n=169; RTL Aktuell Facebook: n=335

APPENDIX

Table 4: Issues represented in TV newscasts and on Facebook (FB) sites (%)

	<i>tages- schau TV</i>	<i>ZDF heute TV</i>	<i>Sat.1 Nach- richten TV</i>	<i>RTL Aktuell TV</i>	<i>tages- schau FB</i>	<i>ZDF heute FB</i>	<i>Sat.1 Nach- richten FB</i>	<i>RTL Aktuell FB</i>
	(n=85)	(n=87)	(n=87)	(n=110)	(n=65)*	(n=73)*	(n=45)	(n=100)
politics	48.2 (n=41)	36.8 (n=32)	24.1 (n=21)	24.5 (n=27)	54.5 (n=36)	39.2 (n=29)	46.7 (n=21)	19.0 (n=19)
economy	5.9 (n=5)	4.6 (n=4)	4.6 (n=4)	4.5 (n=5)	3.0 (n=2)	5.4 (n=4)	13.3 (n=6)	4.0 (n=4)
society/ justice	9.4 (n=8)	5.7 (n=5)	20.7 (n=18)	14.5 (n=16)	12.1 (n=8)	14.9 (n=11)	15.6 (n=7)	13.0 (n=13)
science	3.5 (n=3)	2.3 (n=2)	1.1 (n=1)	2.7 (n=3)	3.0 (n=2)	2.7 (n=2)	0.0 (n=0)	4.0 (n=4)
culture/ cultural events	3.5 (n=3)	3.4 (n=3)	2.3 (n=2)	0.9 (n=1)	7.6 (n=5)	4.1 (n=3)	2.2 (n=1)	0.0 (n=0)
religion/ church	1.2 (n=1)	1.1 (n=1)	0.0 (n=0)	0.0 (n=0)	1.5 (n=1)	0.0 (n=0)	0.0 (n=0)	0.0 (n=0)
nature/ environment	0.0 (n=0)	1.1 (n=1)	1.1 (n=1)	0.9 (n=1)	0.0 (n=0)	1.4 (n=1)	2.2 (n=1)	2.0 (n=2)
accidents/ catastrophes	4.7 (n=4)	3.4 (n=3)	8.0 (n=7)	7.3 (n=8)	3.0 (n=2)	0.0 (n=0)	2.2 (n=1)	6.0 (n=6)
crime	1.2 (n=1)	3.4 (n=3)	11.5 (n=10)	7.3 (n=8)	3.0 (n=2)	4.1 (n=3)	6.7 (n=3)	16.0 (n=16)
human interest	1.2 (n=1)	6.9 (n=6)	12.6 (n=11)	9.1 (n=10)	9.1 (n=6)	12.2 (n=9)	8.9 (n=4)	20.0 (n=20)
sports	10.6 (n=9)	21.8 (n=19)	4.6 (n=4)	20.9 (n=23)	0.0 (n=0)	2.7 (n=2)	2.2 (n=1)	9.0 (n=9)
weather (forecast)	8.2 (n=7)	8.0 (n=7)	9.2 (n=8)	6.4 (n=7)	0.0 (n=0)	8.1 (n=6)	0.0 (n=0)	3.0 (n=3)
consumer advice issues	2.4 (n=2)	1.1 (n=1)	0.0 (n=0)	0.9 (n=1)	1.5 (n=1)	2.7 (n=2)	0.0 (n=0)	2.0 (n=2)
Internet/ new comm.techn.	0.0 (n=0)	0.0 (n=0)	0.0 (n=0)	0.0 (n=0)	1.5 (n=1)	2.7 (n=2)	0.0 (n=0)	2.0 (n=2)

* Summing up the n-values in this column leads to a value that distinguishes from this overall n-value by 1. This is due to rounding when calculating the frequency distribution.

Table 5: Societal groups represented in TV newscasts and on Facebook (FB) sites (%)

	<i>tages- schau TV</i>	<i>ZDF heute TV</i>	<i>Sat.1 Nach- richten TV</i>	<i>RTL Aktuell TV</i>	<i>tages- schau FB</i>	<i>ZDF heute FB</i>	<i>Sat.1 Nach- richten FB</i>	<i>RTL Aktuell FB</i>
	(n=161)	(n=178)	(n=197)	(n=222)	(n=284)	(n=321)	(n=169)	(n=335)
politicians	70.8 (n=114)	44.9 (n=80)	29.9 (n=59)	30.6 (n=68)	53.9 (n=153)	48.3 (n=155)	58.0 (n=98)	27.8 (n=93)
citizenry	10.6 (n=17)	18.5 (n=33)	34.0 (n=67)	27.9 (n=62)	18.0 (n=51)	15.6 (n=50)	9.5 (n=16)	30.1 (n=101)
sociocultural system	7.5 (n=12)	18.5 (n=33)	19.3 (n=38)	21.6 (n=48)	12.0 (n=34)	19.9 (n=64)	12.4 (n=21)	19.4 (n=65)
administrative system	5.0 (n=8)	10.7 (n=19)	7.6 (n=15)	11.3 (n=25)	7.0 (n=20)	8.1 (n=26)	9.5 (n=16)	9.9 (n=33)
economic system	1.2 (n=2)	2.8 (n=5)	3.0 (n=6)	3.2 (n=7)	3.5 (n=10)	5.0 (n=16)	4.1 (n=7)	3.6 (n=12)
interest groups/ NGOs	5.0 (n=8)	4.5 (n=8)	6.1 (n=12)	5.4 (n=12)	5.6 (n=16)	3.1 (n=10)	6.5 (n=11)	9.3 (n=31)