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Joris Veerbeek, Karin van Es & Eggo Müller

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PUBLIC BROADCASTING AND TOPIC DIVERSITY IN THE NETHERLANDS: MENTIONS OF PUBLIC BROADCASTERS' PROGRAMMING IN NEWSPAPERS AS INDICATORS OF PLURALISM

Joris Veerbeek , Karin van Es  and Eggo Müller 

Following debates on media pluralism and decentralised public service media, this article discusses the contribution of Dutch public broadcasters to pluralism. While the Dutch system operates under the assumption that external pluralism of broadcasting associations contributes to diversity, here we empirically explored this relation with respect to topics within societal discourse. We argue that mentions of public broadcasters' programming in newspapers can function as indicators of diversity. As such, we traced mentions of all television and radio programmes by eleven Dutch public broadcast associations in a collection of 263,476 Dutch newspaper articles published during the 2017–2018 TV and radio season. Employing Latent Dirichlet Allocation topic modelling, we thematically contextualised those mentions, which then allowed us to map the breadth of topics associated with programming by different public broadcast associations as well as the extent to which individual public broadcasting associations play a distinct role within a characteristic set of topics. The results of our exploratory analyses support the idea that the external pluralism of the Dutch system produces diversity in alignment with the intentions of the distributed system.

KEYWORDS public broadcasting; media pluralism; diversity; Netherlands; topic modelling

Introduction

According to European and national legislation in EU countries, PSBs are obligated to guarantee access to diverse, pluralistic programming (Valcke, Picard, and Sükösd 2015; Wieten 1979) through their provision of a non-discriminatory plurality of perspectives on social, political, and cultural issues, achieved by including the voices of minorities and by offering non-mainstream cultural and educational programming (Lowe and Martin 2013). Forced to vie with commercial broadcasters while having to resist the market-oriented logic of commercial television (Jacobs, Meeusen, and D'Haenens 2016), PSBs are bound to the concept of serving the public interest, which implies that they should contribute to the aims of citizenship and political participation in liberal democracies (Bardoel and Brants 2003; Cushion 2019; Søndergaard 1996).

Diversity and pluralism, however, prove to be particularly contested notions in academic as well as in policy debates (Karppinen 2013; Raeijmakers and Maesele 2015).

Nonetheless, they are all the more relevant within the fragmented media sphere of the digital age. PSBs must compete not only with commercial companies on the national market but also with the multinational media corporations—such as Netflix and Alphabet Inc.—that have conquered the global market through their digital platforms and streaming services (Lowe and Steemers 2012). PSBs attempt to strategically reposition their services within this changing media environment as public service media (PSM) (Donders 2019).

Nonetheless, powerful pressure groups within EU countries and neoliberal governments have shown themselves to be in favour of downsizing and decentralising public service media to foster diversity and pluralism within a distributed, market-driven and commercially competitive media system. The increased political pressure to legitimise the services of PSM is observable in all EU countries. An interesting case in this regard is the Dutch approach to public broadcasting, which from its inception onwards has functioned as a decentralised system based on independent membership-based broadcast associations. However, government subsidies for these associations depend on their ideologically unique voice in and contribution to public debate and, more importantly, on numbers of membership which in the past decades for all associations kept decreasing steadily, in some cases even dramatically. As a consequence, Dutch policy makers and broadcast associations are searching for alternative, preferably measurable, indicators for association's contribution to public debate and thus for the legitimisation of their public funding.

In this article, we present a 2018 study commissioned by the Catholic-Protestant broadcast association KRO-NCRV. They were interested in the development of new indicators that could help them reflect on their contribution to public debate. Taking newspapers persistent role as interpreter and multiplier of public debate (Schudson 2018; Wevers 2017) seriously, we formulated the following research question: Can mentions of public service broadcasters' programmes in the national press, what we call professional follow-up communication, function as robust indications of a particular broadcasting association's contribution to societal debates? While it has always been assumed that external pluralism contributes to diversity (e.g. Napoli 1999), we seek to empirically explore this relation. Importantly, whereas the computational social sciences employs the scientific method, within the digital humanities—underpinned by a different epistemology—statistics are used more descriptively to identify and plot patterns (Kitchin 2022, 124). Here computation can help the process of interpretation (Ramsay 2010) and 'surface studies' (across texts) can be usefully combined with depth studies (of individual cases) (Manovich 2012). Working in the tradition of the digital humanities: in a first step, we generated data to identify patterns in the mentions of Dutch public broadcasters' programming in the national press. In a second step, we interpreted these patterns to understand their meaning against the background of our research question, and also zoomed-in on individual topics to qualify meaningful distinctions.

Contrary to most of the research on public broadcasting and diversity, our analysis of the societal contribution of public broadcasters does not focus on the so-called *diversity-assent* (Van der Wurff 2004) based on policy documents (Bardoel 2003; Donders 2019), transcribed broadcasts (Jacobs, Meeusen, and D'Haenens 2016) or their online content (Sjøvak, Pedersen, and Owren 2019). Rather, we examined *diversity-as-perceived* in professional follow-up communication in the Dutch national press. Specifically, we traced mentions of all television and radio programmes by Dutch public broadcast associations in a collection of 263,476 Dutch newspaper articles published during the 2017–2018 TV and radio season (September 2017 and August 2018). Employing Latent Dirichlet Allocation (LDA) topic modelling, we thematically contextualised those mentions, which then allowed us

to map the breadth of topics associated with programming by different public broadcast associations in the Netherlands as well as the extent to which individual public broadcasting associations play a distinct role within a characteristic set of topics.

After a characterisation of the unique Dutch public broadcasting system and the debate about media diversity and pluralism, we introduce topic modelling as a method to study the broadcasters' contributions to topic diversity and explain why we suppose that mentions of programmes in the Dutch national press can be seen as a reliable indicator for a broadcast association's contribution to public debate. We then present our findings for the decentralised system of public broadcasters in the Netherlands. In our conclusion, we reflect on the methodological implications of this study and discuss the potential use of our approach for research into questions concerning media pluralism and diversity beyond the Dutch context. With this research, we make a contribution to discussions of the continued legitimacy of public institutions. Herein we respond to the call of Mazzucato et al. (2020) for the development of measures for *public value* such as the role public broadcasters have in public debate by adding and clarifying diverse topics.

Member-based Associations as Pillars of a Pluralistic Public Broadcasting System

From its inception on, the Dutch public broadcasting system has been grounded in the idea of *external pluralism*, defined as “the existence of a range of media outlets or organizations reflecting the points of view of different groups or tendencies in society” (Hallin and Mancini 2004, 29). Unlike in other European national systems of internal pluralism, where national (as in the UK) or a mix of national and federal (as in Germany) public broadcasting organisations must ensure the availability of sufficiently diverse and pluralistic programming, policy in the Netherlands has been guided by the conviction that the different broadcast associations, taken as a whole, would reflect the diversity of Dutch society. Acknowledged by the Ministry of Education, Culture and Science, membership-based private broadcasters receive a concession to contribute to programming on the public television and radio channels. These associations have their roots in the so-called social pillars—Protestant, Catholic, Socialist and Liberal—that together made up Dutch society in the early twentieth century (Bardoel 2003). Until the 1960s, five associations based on these pillars produced public programming for radio and television according to a certain ratio. From the 1960s onwards, reflecting new realities of immigration and a growing diversity in the Netherlands, new associations representing ethnic and religious minorities or offering more entertaining genres of programming entered the public broadcasting system, amounting to more than twenty different associations by 2000. These associations were allocated a certain budget and a corresponding amount of broadcast time depending on their membership size and in accordance with certain thresholds.

Rising debates about the legitimisation of public broadcasting vis-à-vis the growing commercial channels in the 1990s and questions about the efficiency of the inherited public broadcasting system lead neoliberal governments to cut budgets repeatedly and gradually revise the public broadcasting system. The Concession Act of 2000 assigned a single concession holder to be responsible for public radio and television. It was established in 2002 as the Dutch Foundation for Broadcasting (NPO) that was charged in 2008 to centrally administer all public broadcasting services in order to better compete with

the commercial channels on the national market. Subsequent revisions in the Media Law in 2016 induced associations to merge, which reduced their number from twenty-one to eight. To cut administrative costs and to stimulate creative competition between the associations and external content producers, the NPO was also entrusted not only to coordinate but to actively steer the public channels' programming and scheduling.

These revisions of the public broadcasting system also reflect discussions about the claim that citizen membership in broadcast associations indicates a *meaningful* relationship between these associations and the public. Already from the 1970s onwards, the traditional social, religious and ideological pillars have become ever less significant for the organisation of political, social and cultural life, and as a result the committees advising the Dutch Government about future media policy (e.g. Raad voor Cultuur 2014; Wetenschappelijke Raad voor Regeringsbeleid 2005) have directed increasing criticism at the decentralised member-based public broadcast system. In a globalised and individualised society like the Netherlands, members of the younger generations no longer felt the urge to join one of the broadcast associations, and thus their membership bases, and particularly those of the larger, traditional associations, diminished significantly.

Today, the NPO directs the broadcasting activities of nine member-based associations and two task-based organisations (see Table 1) on three main public-television channels and six primary public-radio channels, along with numerous specialised online tv and radio channels. Three of the member-based associations are 'aspiring broadcasters' that receive a limited budget and amount of broadcast time for each to prove that it adds a unique voice to the public system, representing groups and perspectives that had been underrepresented or lacking.

Although the aforementioned revisions of the media legislation has gradually lowered the minimum membership threshold for broadcast associations, the fundamental question today is whether the decentralised Dutch public-service broadcasting system and its membership principle, operating alongside established commercial channels, remains an effective model to generate what it had been meant to guarantee: a diversity of accessible programming representing diverse societal groups and providing all citizens with pluralistic viewpoints and perspectives on societal matters. Associations' decreasing

Table 1.
Overview of the public broadcaster associations within the Dutch system

Broadcaster	Type	Target audience	Number of members (2014)
AVROTROS	A	Liberal/entertainment	686.439
BNNVARA	A	Social-democratic/youth	747.927
KRO-NCRV	A	Christian	798.930
EO	A	Evangelical	440.788
VPRO	A	Left-wing progressive	339.623
MAX	A	Elderly people	345.685
HUMAN	Aspiring broadcaster	Humanistic	68.261
WNL	Aspiring broadcaster	Right-wing conservative	52.966
PowNed	Aspiring broadcaster	Right-wing/youth	51.609
NOS	Task-specific broadcaster	Sport and news	NA
NTR	Task-specific broadcaster	Culture, education, society	NA

numbers of membership, particularly rapidly since the 2000s, keep fuelling debates about the systems' legitimacy and force policy makers to develop alternative concession and evaluation criteria for existing and aspiring broadcast associations. It is the context of this debate, that our study of mentions of programmes in national newspapers as indicators of diversity addresses.

Assessing External Pluralism

As Valcke, Picard, and Sükösd (2015) remark, 'pluralism' and 'diversity' are generally used rather loosely and are not well-defined in policy papers or scholarly articles discussing media pluralism. Depending on context, both categories can refer to the multiplicity of media outlets or ownership models, the variety of media coverage in terms of groups or perspectives represented, the accessibility of media coverage for citizens in different regions, or legislation facilitating pluralism and diversity (Valcke et al. 2015). We agree with Kari Karppinen's critical intervention in the debate and his observation that "the fact that the MPM [European Media Pluralism Monitor] contains no less than 166 indicators illustrates the complexity of media pluralism as a policy objective and questions some of the more reductionist uses of the concept" (2013, 295). Karppinen also argues that the use of the term and any of its definitions is never neutral, but "will entail choices about which of its aspects are deemed important and which criteria are considered valid for its assessment" (288).

With an eye to the discussion of pluralism and diversity in the Dutch context, we here follow a suggestion made by Raeijmakers and Maesele (2015). On the need for a distinction that would distinguish pluralism from diversity, they comment that it is "extremely relevant for both a theoretical and empirical reflection on media and democracy, as they underlie different perceptions of plurality" (1050). Indeed, this is readily apparent in how the NPO defines these public values. Here we find "pluriformity" used as an umbrella term covering "diversity" and "pluralism". Following Raijemakers and Maesele's distinction, we refer with "diversity" in a more empirical sense to the reflection and representation of the variegated array of groups within society, while "pluralism" means, in a more normative sense, that media should cover the full range of views and ideological perspectives on political, social or cultural issues.

The Dutch debate about the decentralised system of public broadcast associations addresses the issues both of the diversity of groups represented and the pluralism of voices and perspectives on significant societal questions. Since neither aspect is easy to examine empirically, our study makes a modest first step in exploring a particular dimension of this highly complex question. Given the persistent role of the press as an interpreter and multiplier of news (Gerhards and Neidhart 1993; Schudson 1995) via traditional distribution channels and diverse new platforms, we suppose that professional follow-up communication can be used as a relevant source for scrutinising broadcasters' contribution to public debate. Hereby we follow the approach of research into the so-called "follow-up communication" that analyses how TV and radio programming is mentioned and discussed in everyday communication (Porten-Cheé 2017). While this tradition as a branch of media effects research is exclusively dedicated to everyday communication by audience members and excludes professional communication, we take press coverage of TV and radio programmes as a *professional* form of follow-up communication. We see this particular form of follow-up communication as an indication of the societal meaningfulness of a TV or

radio programme since mentions of TV and radio programming in the national press reflect the contribution of TV and radio to certain topics and related public debates—at least as perceived by professional journalism, with “its role as the expert arbiter of news” (Waisbord 2013, 10). We do not claim that press coverage does refer to all TV and radio genres and programmes evenly, but, at the same time, not all genres and programmes contribute to societal debates evenly. Not surprisingly, news and actualities programmes, documentaries and informative genres have, compared to their audience ratings, way more mentions than for example entertainment genres (Veerbeek, van Es, and Müller 2021). Our claim thus is not that mentions of TV and radio programmes in the press is a *representative* indicator, but a *meaningful* indicator. In other words, we conceptualise newspaper articles as meaningful interfaces between broadcast media and society more broadly, reflecting the topic diversity of TV and radio programming as perceived by journalists. This indicator therefore cannot *replace* other indicators, but complement these with its particular emphasis on the printed press’ function of both moulding and reflecting public opinion.

Topic Modelling the Newspaper Corpus

Our corpus of newspaper coverage as meaningful interface between broadcast media and societal debates comprises one year of articles from *all* nine national newspapers and three selected political magazines. The major five of the national newspapers, *De Telegraaf*, *Algemeen Dagblad*, *De Volkskrant*, *NRC Handelsblad* and *Trouw*, each have a circulation between 400,000 and 100,000 copies and together a share of ca. 90% of the total market (Bakker 2018). The selected magazines are the three leading opinion-making weeklies representing the political spectrum from conservative-liberal (*Elsevier Weekblad*) to progressive left-wing positions (*De Groene Amsterdammer* and *Vrij Nederland*, the latter switching to monthly circulation in February 2018).

The articles, published between 1 September 2017 and 31 August 2018, span the full broadcast season of 2017–2018. In total our dataset consists of 263k articles, containing more than 110m tokens. Table 2 shows the national newspapers and magazines in our dataset and the distribution of articles over these papers. This shows that the articles are

Table 2.
The distribution of newspaper and magazine articles in our dataset

Source	Type	#Articles	#Tokens	Tokens per article
De Telegraaf	Newspaper	48.579	15.286.031	314
AD/Algemeen Dagblad	Newspaper	32.599	9.704.763	298
de Volkskrant	Newspaper	30.136	16.141.818	536
NRC Handelsblad	Newspaper	29.512	14.662.731	497
NRC.NEXT	Newspaper	27.502	13.694.117	498
Nederlands Dagblad	Newspaper	25.759	9.633.462	374
Trouw	Newspaper	25.067	12.036.011	480
Reformatoisch Dagblad	Newspaper	22.001	7.584.285	345
Het Financieele Dagblad	Newspaper	16.829	7.471.683	444
Elsevier Weekblad	Magazine	2.916	1.355.085	465
De Groene Amsterdammer	Magazine	2.343	2.714.025	1158
Vrij Nederland	Magazine	224	500.177	2233
Total		263.467	110.784.188	420

not equally distributed over the titles. As a result, the topic probabilities analyzed in our study are driven more by the newspapers with the largest share of articles than by those with a smaller number of articles due to frequency of publication and number of pages. This bias is not necessarily problematic, as it could be argued that the newspapers that publish more often generate a greater amount of input for societal debates than less frequently published sources.

Except for the two smaller religiously bound newspapers that mention programmes by the christian broadcast associations KRO-NCRV and EO slightly above average, we could not identify a selection bias in the mentions. For all other newspapers, the most frequently mentioned PSB was the NOS, followed by BNNVARA, KRO-NCRV and AVRO-TROS (in alternating order), indicating that the distribution of mentions of programmes by the individual associations is evenly distributed over the newspapers irrespective of ideological affinities, but mainly related to the size of the broadcasting association. Again, since the religious newspapers' circulation is less than ten per cent of the total, it could be argued that they also have a lower impact on societal debates. To analyze the contribution of each public broadcasting association to societal debates we focused on mentions of television and radio programmes in the newspaper corpus, for example (from a British newspaper) "Speaking on *BBC Breakfast* on Friday morning, the prime minister talked about his vision for the country post-Brexit" (Otte 2019). To retrieve such mentions, we used a pre-defined list of all the radio and television programmes that aired on public broadcasting channels during the 2017–2018 broadcast season. This list, taken from the Dutch viewer audience measurement service (Stichting KijkOnderzoek), contains the titles and the relevant metadata of the programme, including the public broadcasting association, the time of broadcast, the medium and the channel, of 1,842 radio and television programmes.

For all 1,842 programmes specified in the list, we searched the newspaper corpus for occurrences of those titles. This search process, however, did not turn out to be straightforward. The most 'sophisticated' simple search operation achieved an accuracy (measured by F_1 -score) of only 0.531 on a manually tagged set of newspaper articles, mostly due to inconsistent capitalisation and programme titles that would produce ambiguity (such as *Pointless*, which could refer to the TV game show or the adjective 'pointless'). We, therefore, guided the search process with a manually defined set of rules (e.g. a textual occurrence of 'pointless' counts as a reference to the television programme if and only if 'game show' is also mentioned within the text) and a set of alternative spellings/abbreviations (e.g. both *Would I Lie to You?* and *WILTY* count as a reference to the same programme). This rule-based method significantly improved the quality of our search process, resulting in a F_1 -score of 0.832 on the manually tagged set of newspaper articles. After applying our rule-based method, we eliminated all mentions of television programmes in TV guides using a machine learning classifier trained on a manually labelled subset of TV guides. After all: being mentioned in television guides can not be considered a meaningful indicator of societal relevance.

While the occurrences themselves yield relevant results about the types of programmes frequently mentioned in newspapers, this article's aim is to chart the different ways that PSBs contribute to societal debates. Therefore, we are interested not necessarily in *how often* but rather in *what context* a programme title is discussed. To thematically contextualise the mentions of PSB programmes, we used Latent Dirichlet Allocation (LDA) topic modelling (Blei, Ng, and Jordan 2003). LDA is an unsupervised learning algorithm that allows for the automatic identification of topics in a large volume of text. Topics are

represented as multinomial distributions over all the words in the corpus. Sorting the words with the highest probability for a given topic (for example: soccer, tennis, hockey) allows for the manual identification of a representative topic label (sports). The entered texts, in turn, are characterised by a distribution over all the topics.

We trained our model on the total newspaper corpus of 263k articles using scikit-learn's (Pedregosa et al. 2011) implementation of LDA with batch learning. It is common practice to pre-process the corpus before feeding it to the model in order to improve its output (Jockers and Mimno 2013, 752). Specifically, we pre-processed the corpus using the following three steps. First, we lemmatised (i.e. reduced all inflections of a word to their root form) all the words in the corpus using the natural language processing module *Frog* (Van den Bosch et al. 2007). Second, we removed a standard list of 101 Dutch stop words. Third, we removed all words occurring in over 180k articles, as well as words occurring in fewer than 50 of the 263k articles.

LDA assumes that the number of topics in the corpus is known. To establish the number of topics most optimally suited to our analysis, we ran a series of seven models on a varying number of topics (25, 50, 75, 100, 150, 200 and 250). We then evaluated the output of those models on the basis of two criteria. To start, we wanted our topics to be coherent—as is often the case with topic modelling. But, more particular to the aims of our research, we also wanted as many of our topics as possible to be indicative of societal debates. Setting the number of topics too low might result in topics that are too general (e.g. *politics* instead of *immigration*), while setting the number too high could result in topics that are too specific (e.g. *windmills* instead of *climate change*). Although several metrics exist to automatically determine the number of topics, such metrics do not necessarily coincide with human interpretation (Chang et al. 2009). Therefore, after extensive deliberation and comparison of the topics outputted by the different models against the criteria mentioned, we opted for 200 topics.

After running our 200-topic model, the topics were collectively interpreted and labelled by three researchers. The topic labels are based on the words with the highest probability of occurring given a topic, which we visualised using word clouds. We deemed thirteen of the 200 topics uninterpretable; seven consisted of an unusual combination of two or more underlying subjects (such as 'Fipronil' and 'Tesla').

Calculating Distinctive Topics

With the specific aim of modelling the extent to which a topic is *distinctive* for a broadcaster, we combined more quantitative and statistical measures. To evaluate whether a topic is distinctive for a broadcaster we first, rather conventionally (cf. Hall, Jurafsky, and Manning 2008; Oelke et al. 2014), defined the probability that a newspaper article discussing a programme by a public broadcasting association b is about topic z . We approximated this by calculating the *average probability* of topic z overall articles mentioning broadcaster b . Then, following Oelke et al. (2014), we considered topic z to be distinctive for broadcaster b against the remaining set of broadcasters if and only if its probability was both (1) higher than the average probability over the set of all articles, and (2) higher than the highest probability of the remaining broadcasters. The number of times the probability of a certain broadcaster is higher than the highest probability of the remaining broadcasters is called the *discrimination threshold* (DT).

However, in our calculations we wanted to allow for a topic being distinctive not just for one class but also for a subset of classes—in our case, for multiple broadcasters (see Oelke et al. 2014, 4). After all, it could be the case that two broadcasters are very often discussed within the context of a certain topic while others aren't, a finding which would not show up if a topic could be distinctive only for one broadcaster. A topic is considered distinctive for a subset of broadcasters if and only if the probability of the broadcaster with the lowest probability in the subset is higher than the highest probability of the broadcasters *not* present in the subset. In this case, the discrimination threshold is computed by dividing the lowest probability of the subset by the highest probability of the remaining classes. Note that from this perspective, a topic could very well be distinctive for multiple subsets of broadcasters, especially when the number of classes is rather high. Therefore, we chose the broadcaster or the subset of broadcasters with the highest discrimination threshold to be distinctive for this topic. Oelke et al. (2014) term the highest discrimination threshold the *discrimination factor* (DF).

A high discrimination factor does not necessarily rule out the possibility that the observed difference has been produced by chance—even large differences could occur randomly. We, therefore, combined this approach with Fisher's randomisation test (see Jockers and Mimno 2013; Smucker, Allan, and Carterette 2007). This test involves the random shuffling of the values of the classes—in our case, the broadcaster(s) assigned to each article— n times. As such, we simulate the distribution of topic probabilities under the hypothesis that there is no distinction among broadcasters.¹ If the same differences frequently occur when the broadcasters are randomly shuffled, this result suggests that the observed difference is also likely to be produced by chance.

Although we sought to empirically validate our models and account for naturally occurring differences, the nature of our analysis is still to a large extent explorative. After all, we did not aim to test some general hypothesis but sought rather to explore the occurrence of topics in relation to the different broadcasting associations.

Distinctive Topics of the Public Broadcasting Associations

In total, 15,291 of the 263,467 articles (5.8%) in our newspaper corpus discuss at least one programme by PSB. Figure 1 offers a general view of the number of mentions each public broadcasting association has received in our newspaper corpus. Obviously, the mentions are not (more or less) divided equally over the broadcasters. The broadcaster with the highest number of mentions (BNNVARA) received more than 71 times more mentions than the broadcaster with the lowest number (PowNed). Furthermore, the number of mentions seems to be correlated with the number of members as shown in Figure 1, with the three broadcasters with the most members and the highest share of airtime also having the most mentions, and the three aspiring broadcasters with the fewest members and airtime also having the fewest mentions. Noteworthy also are the differences in the articles/mentions-ratio: While programmes by the NOS (the task-specific broadcaster responsible for news and sports coverage) are mentioned in the largest number of single articles, programmes by BNNVARA nevertheless have the most mentions in total single articles on TV programming regularly referring to more than just one programme. This suggests that the programmes of the former are mentioned in a more sporadic way.

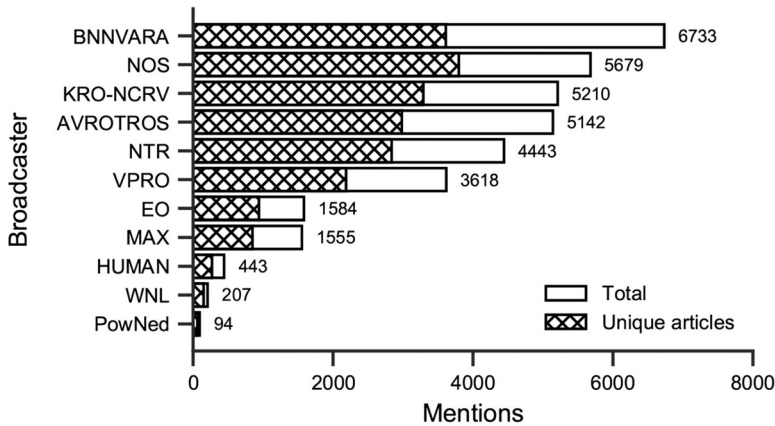


Figure 1.

Total number of mentions that each public broadcasting association has received and the number of articles that mention at least one of the programmes by each broadcaster

A look at the average probabilities of each of the 200 topic allows identifying the topics with the highest average probability overall suggesting two conclusions. First, speaking purely quantitatively, words revolving around radio and television, along with non-specific words, tend to dominate the context in which television and radio shows of PSB are discussed. We are interested in the topical contribution of PSB programmes to societal debates; nonetheless, we should note that the most common context for a radio or television programme to be mentioned is news about radio and television programmes that discuss a new season, the debut or departure of presenters, ratings, etc. Second, the topic distributions of each broadcaster are, overall, strikingly similar. However, this does not necessarily mean that the broadcasters' contributions to topics of societal debate are similar. It does, however, imply that—alongside the differences we sought to explore—there are a number of non-distinctive topics in press coverage mentioning PSB programming (Figure 2).

With this caveat in place, the top four distinctive topics for each broadcaster, sorted by the probability of their occurrence, are listed in Table 3. As the table shows, not all distinctive topics for a broadcaster (or a subset of broadcasters) are *significantly* distinctive. The highest discrimination factor (DF) that appears in this table—that of topic *Motorcycle clubs and smoking*—is equalled or exceeded by the DF of the randomised labels 8,281 out of 100,000 times (or 8 in 100 times), whereas one of the lowest discrimination factors—belonging to the topic *Gender and sexual identity*—is equalled or exceeded by the randomised means only 1,568 out of 100,000 times. This difference is most likely because PowNed, with its smaller sample size, is less robust to outliers.

Every broadcaster is associated with at least one topic that is both distinctive and significant. For the two task-based broadcasters—NOS and NTR—this is true for all the topics in the four most prominent topics. For the two smallest broadcasters, PowNed and WNL, this holds for only one of the top four topics and only at the highest statistical significance threshold (0.05). The remaining broadcasters vary, ranging from two to four topics without a clear pattern emerging regarding the number of mentions or members. Furthermore,

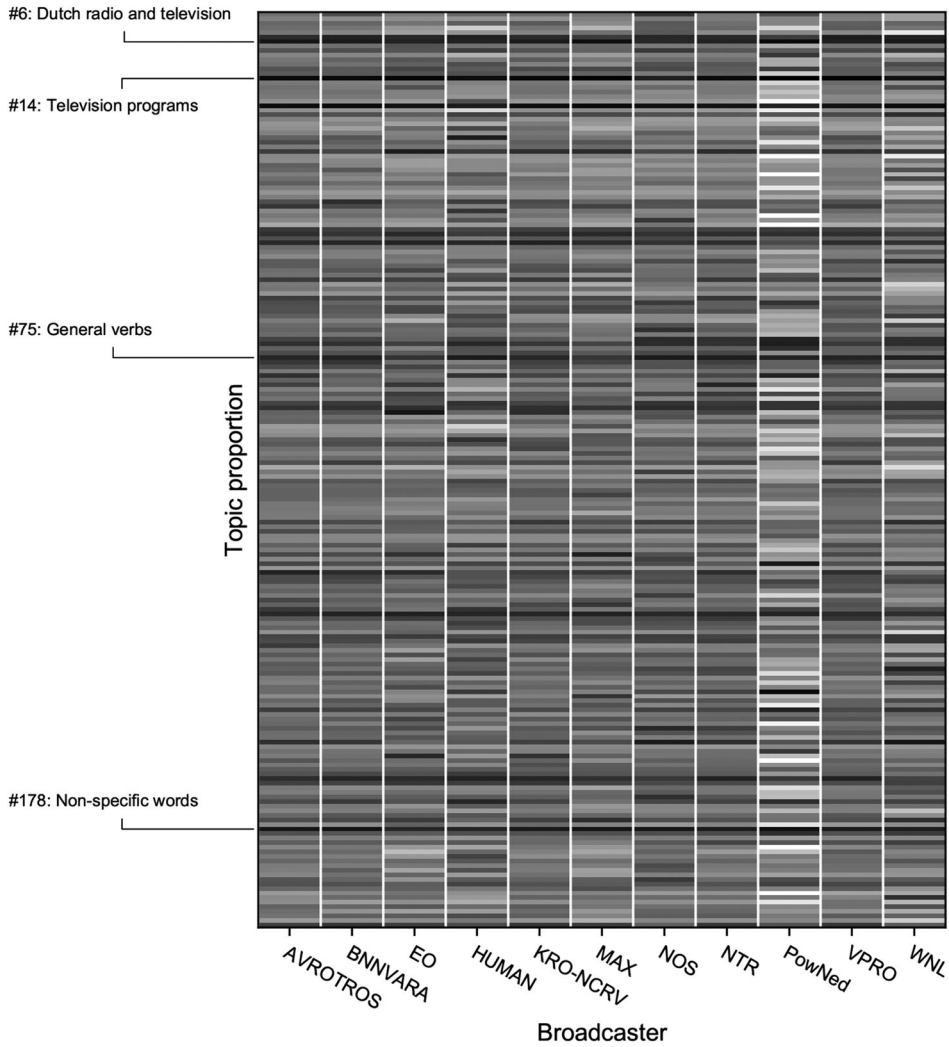


Figure 2. Global overview of the topical ‘DNA’ of each broadcasting association. Each row represents one topic, and the darkness of one block indicates the strength of the probability of a topic occurring given a particular broadcaster. The darkness is logarithmically scaled in order to account for more marginal differences

most of the topics are distinctive for only one broadcaster. However, as the numbers in subscript in Table 3 indicate, the topic we labelled *Famous Dutch media personalities* stands out: it is distinctive for six public broadcasting associations.

Qualifying Meaningful Distinctions

Another more qualitative and perhaps more crucial argument is that the majority of topics shown in Table 3 are not only significantly distinctive but also meaningfully so. The

Table 3.

The four most prominent distinctive topics for each broadcasting association, sorted by the probabilities of the topics

	Broadcaster	Topic	Average topic proportion	DF	P
0	AVROTROS	#122: Music	0.026	1.434**	0.01
		#76: Famous Dutch media personalities ^{1,4,5,7,9}	0.012	1.699***	0.0
		#42: Winning awards ^{5,9}	0.012	1.305	0.076
		#138: Eurovision and arts	0.011	3.581***	0.0
1	BNNVARA	#41: #MeToo	0.017	1.85	0.056
		#76: Famous Dutch media personalities ^{0,4,5,7,9}	0.013	1.699***	0.0
		#98: Literature ^{7,9}	0.009	1.24	0.054
		#123: Gender and sexual identity	0.008	1.189*	0.016
2	EO	#87: Christian religion	0.046	2.596***	0.0
		#30: Numbers / times of TV guides	0.031	1.701***	0.0
		#162: Dutch Christianity ⁴	0.022	4.799***	0.0
		#118: Holiday ⁵	0.014	2.135***	0.0
3	HUMAN	#27: Economy	0.033	5.748*	0.013
		#93: Elderly care	0.016	2.976	0.091
		#141: Diplomacy	0.008	3.515*	0.015
		#184: Turkish politics	0.008	3.976*	0.041
4	KRO-NCRV	#162: Dutch Christianity ²	0.015	4.799***	0.0
		#76: Famous Dutch media personalities ^{0,1,5,7,9}	0.008	1.699***	0.0
		#95: Agriculture	0.007	3.025***	0.0
		#164: Health and nutrition	0.006	1.612*	0.039
5	MAX	#118: Holidays ²	0.029	2.135***	0.0
		#149: Baking	0.014	11.471***	0.0
		#129: Food and taste	0.012	1.774*	0.021
		#105: Restaurants	0.008	2.161***	0.0
6	NOS	#159: Dutch politics ¹⁰	0.035	2.206*	0.03
		#156: Dutch Royal Family	0.02	2.021***	0.0
		#171: Olympic Games / ice skating	0.016	3.595***	0.0
		#69: Soccer organisation	0.015	3.503***	0.0
7	NTR	#81: Classical music	0.023	1.913**	0.003
		#62: Theatre	0.013	1.351**	0.005
		#132: Social interaction ^{2,9}	0.011	1.451*	0.02
		#76: Famous Dutch media personalities ^{0,1,4,5,9}	0.009	1.699***	0.0
8	PowNed	#148: Motorcycle clubs and smoking	0.077	6.939	0.083
		#120: Money	0.037	3.075*	0.049
		#71: Dutch House of Representatives ^{6,7,10}	0.026	1.806	0.282
		#73: Law, rules and regulations	0.016	3.138	0.088
9	VPRO	#58: Movies	0.014	1.175	0.082
		#132: Social interaction ^{2,7}	0.013	1.451*	0.02
		#76: Famous Dutch media personalities ^{0,1,4,5,7}	0.012	1.699***	0.0
		#98: Literature ^{1,7}	0.011	1.24	0.054
10	WNL	#159: Dutch politics ⁶	0.044	2.206*	0.03
		#143: Military	0.029	3.787	0.067
		#176: Tourism ⁵	0.017	1.651	0.122
		#22: Companies	0.017	1.991	0.141

Note: The numbers in superscript indicate the index of the broadcaster(s) that the topic is also distinctive for *** $p < 0.001$; ** $p < .01$; * $p < .05$.

programmes of the two broadcasters with a Christian origin, KRO-NCRV and EO, for example, are, not surprisingly, discussed significantly more often than the other broadcasters in the context of debates on Christianity and religion (the topics *Christian religion* and *Dutch Christianity*). The distinctive topics of MAX, whose programmes target the elderly, are focused largely on leisure activities, with topics like *Holidays*, *Baking*, and *Food and Taste*. The programmes of BNNVARA—a merger of the progressive VARA and the youth-centred BNN—are most frequently brought up in the context of topics often associated with left-wing movements, such as *#MeToo* and *Gender and sexual identity*, though only the latter is significantly distinctive for the broadcaster. WNL, the Netherlands' youngest aspiring broadcast association on the right side of the political spectrum, is equally associated with topics that have traditionally been closely intertwined with right-wing political ideas, such as *Military* and *Companies*, but—again—only the more general *Dutch politics* is significantly distinctive for WNL. The distinctive topics for PowNed, also positioned at the right side of the political spectrum but aiming at a younger audience than WNL, can also be linked to this right-wing perspective, with topics such as *Law, rules and regulations*, though only the topic *Money* is significantly distinctive for PowNed (with a *p*-value of 0.049).

As Table 3 also indicates, the liberal, arts-and-entertainment-driven AVROTROS is centred on topics concerning popular culture and its diversions, such as *Music*, *Winning awards*, and *Eurovision and arts*. This result aligns mostly with the non-pillarised origin of the TROS in the 1960s and its favouring more popular, American-style programming (Bardoel 2003). In the debates on Dutch television in the 1970s, the word 'TROSsification' was even coined to denote "the phenomenon of making everything fit the lowest presumed public common denominator" (Smith 1979, 225). Furthermore, *Classical music* and *Theatre* are distinctive for the NTR, a task-specific association responsible for culture and education, while the programmes of NOS, the other task-specific broadcaster, responsible for news and sports, is distinctively discussed in the context of general newsworthy topics such as *Dutch politics* and *Dutch Royal Family* and topics about sports. VPRO, aiming at an intellectual, left-wing audience, is centred on more complex topics dealing with high culture, like *Literature*, *Social interaction* and *Movies*, although only the *Social interaction* and *Famous media personalities* is significantly distinctive for the broadcaster. Finally, the topics shown in Table 3 under the aspiring association HUMAN are, while significant, harder to interpret in the context of their humanistic perspective. *Elderly care* could perhaps be associated with a general humanistic approach, but topics such as *Turkish policy* and *Diplomacy* seem determined mainly by a single documentary broadcast by HUMAN on the Turkish-Dutch diplomatic conflict of 2017.

To validate our finding that the broadcasters can be distinguished from one another with reasonable accuracy, we ran two additional so-called classification experiments (cf. Jockers and Mimno 2013) in which the topic probabilities of each document are used as features for training a (simple) machine learning model that has to predict the associated class labels (in our case: the broadcaster mentioned). Whereas calculating a topic's distinctiveness is limited to a single topic, the performance of the classification model on a hold-out test set—a part of the dataset that is not used for training the classification model and can thus be used for testing the validity of the predictions—provides us with an indication of the predictive power of the complete set of topics. Given the inherent complexity of predicting eleven classes in a multi-label fashion, we performed two classification experiments. First, we tested whether every combination of two broadcasters can be distinguished from

each other, effectively training 66 different classifiers. Second, we trained a one-vs-rest classifier, in which each broadcaster is discriminated against all the other broadcasters.² We evaluated the former as a binary classification—selecting only the articles where one of the two broadcasters are mentioned—and the latter as a multi-label ranking problem. The results of both experiments underscored the finding that public broadcasters in the Dutch system indeed have unique identities when it comes to the topics their programming is associated with in newspapers. Broadcasters could be distinguished with relatively high accuracy: in the binary classification tasks, the average accuracy (measured by $F_{1,11}$ -score) varied between 0.64 and 0.83. If there were no real distinction between two broadcasters, the F1-score would average around 0.50. The multi-label model based on topic proportions resulted in an average precision of 0.61—a significant improvement over the performance of a classifier exploiting only the label frequencies, which averaged around 0.46.

Conclusion and Discussion

In this paper, we wanted to examine if mentions of public service broadcasters' programmes in the national press function as robust indications of a particular broadcasting association's contribution to societal debates. To answer this question we analyzed the extent to which the unique Dutch system of decentralised PBS and external pluralism fosters topic diversity, based on mentions of PSB programmes in the national press. The results of our exploratory analyses of press coverage support the idea that each of the nine broadcast associations have a unique identity as perceived in print media publications. Our quantitative analysis of the mentions of the diverse broadcasters' programming in the press shows that they are associated with distinct topics linked to the religious or ideological backgrounds of the various associations. Based on these findings, one can conclude that the external pluralism of the Dutch public broadcasting system seemingly supports content diversity in alignment with the intentions of the distributed system. The study confirms what advocates of the distributed system have claimed since its inception, but what became more and more questioned in media policy debates during the past 30 years: The distributed systems fosters diversity in terms of topics addressed by the diverse broadcast associations. The study furthermore underscores the merit of our approach demonstrating how mentions of PSB's programmes could productively be used as indicators of their contribution to societal debates.

Our approach, however, is not without its limitations. First, the empirical data, though extensive, are limited to what the press covered. Given that journalists can be seen as "interpretive communities" (Zelizer 1993) or as "communities of practice" (Meltzer and Martik 2017) that share certain journalistic routines and interpretations of the world, it is likely that these communities also generate blind spots among their members. This method's supposition is that journalistic discourse, notwithstanding its ideological biases and its increasingly precarious position within the changing media environment (Broersma and Peters 2013), can be taken as a valuable basis of empirical data for research into PSB's topic diversity in societal discourse. Given the nature of this approach, it reproduces potential blind spots of the printed press.

Second, as Jonas A. Schwarz (2016, 137) explains, in reducing diversity to a quantifiable quota, important qualitative aspects are overlooked. Within the context of this

research, we examined the *topics* associated with the different public broadcasters and used statistical methods to determine how distinct these topics are. This approach provides a valuable yet rather one-dimensional reflection on diversity within societal debates. Importantly, aside from the question of whether all the different groups in society and their views are adequately represented, the quantitative approach does not consider *how* particular topics have been discussed in the press as related to the various broadcasters' programming. In fact, any given topic can be discussed from different religious or ideological vantage points and in pursuit of any number of varied discursive goals: to inform the audience about a topic, to contextualise it or to bring forward a specific relevant argument. However, as we have discussed elsewhere (Veerbeek, van Es, and Müller 2021) based on a number of case studies, the data allow us to zoom in on particular topics and qualitatively analyze whether broadcasters place certain topics on the agenda deliberately and distinctively or simply tap into their popularity.

Third, as already mentioned above, any definition of media pluralism and diversity and any operationalisation of these terms in empirical research necessarily implies choices regarding the aspects and standards of its assessment. Our study is obviously geared towards the analysis of the Dutch decentralised PSB system in its highlighting of the differences among the varied broadcast associations that are still expected today to contribute unique perspectives that represent and speak to their adherents, even though the aforementioned processes of 'de-pillarization'—i.e. individualisation, commercialisation, and globalisation—have contributed to increasing erosion among their membership bases and thereby affect the debate about the governing principle of the Dutch PSB system. In our study, we have emphasised the diversity and distinctiveness of topics—as reflected in the national press—as an indicator of pluralism and, though only implicitly, the impact of broadcast associations on societal debate.

With these three caveats, the method of our study, applied for the first time in the context of questions regarding the pluralism and diversity in terms of content of public broadcasting, does trace the resonance of public broadcasting topics for societal discourse, which can be meaningful indicators of their contribution to such discourse. In future research, it would, first and foremost, be particularly desirable to cover the major commercial TV and radio channels in the Netherlands as well, in order to explore whether public broadcasters address themselves to *different* topics than their commercial counterparts and whether the former indeed fuel societal debates through coverage of topics neglected by the latter. Does a distributed PSB indeed facilitate diversity to an extent that exceeds commercial broadcasters' contribution to diversity?

Our methodology could also help generate data about topic diversity in countries with less decentralised or even monopolistic systems of PSB. For example, the German or British system, often referred to as role models, offer more than a single public broadcaster providing programming for a number of different radio and TV channels. Here also the difference between PSB and commercial channels in topic diversity is important, in light of 'Public Value Tests' that in most countries emphasise questions of market competition, added value versus costs, and governance, while for democratic societies particularly the crucial question of pluralism remains undervalued given the criteria and the methods of the tests (Gransow 2018; Moe 2010).

Although we regard our method to represent a means to generate robust data about topic diversity of an entire national broadcasting system, including public and commercial channels, we agree with Kari Karppinen's (2013, 295) view that "the empirical indicators of

media pluralism should be seen more as an addition to the media policy debate, rather than as objective instruments that bring closure to political contestation". In this study, our focus has been the Netherlands, but its insights are relevant more broadly because the approach discussed here allows for evidence-based insights into the relation between multiple providers within a media space and a diversity of their contribution to societal debate.

NOTES

1. More specifically, for each randomised constellation we compute the probability for the two broadcasters that we used for ascertaining the *discrimination factor*. We then calculate the *discrimination threshold* between these two randomised means (on both sides). Finally, we estimate the *p*-value by dividing the number of times the *discrimination threshold* of the randomised probability is greater than or equal to our originally observed *discrimination factor* by the number of random samples. Following Smucker, Allan, and Carterette (2007, 627), we run our randomisation tests with 100k samples.
2. For both classification tasks, we used a standard Logistic Regression model as implemented in scikit-learn (Pedregosa et al. 2011). Because our classes are heavily imbalanced, we downsampled the majority class to the size of the minority class in our binary comparisons. We sample the majority class ten times, and the scores that we report are the means over those ten runs.

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ORCID

Joris Veerbeek  <http://orcid.org/0000-0001-5110-0720>

Karin van Es  <http://orcid.org/0000-0001-5184-8640>

Eggo Müller  <http://orcid.org/0000-0002-2748-8662>

REFERENCES

- Bakker, Piet. 2018. "Oplage landelijke kranten: Telegraaf en Ad krijgen opnieuw klappen." *Stimuleringsfonds voor de Journalistiek*, 18 April. Accessed January 15, 2021. <https://www.svdj.nl/oplage-telegraaf-ad-klappen/>.
- Bardoel, Joe. 2003. "Back to the Public? Assessing Public Broadcasting in the Netherlands." *Javnost - The Public* 10 (3): 81–95.
- Bardoel, Joe, and Kees Brants. 2003. "From Ritual to Reality: Public Broadcasters and Social Responsibility in the Netherlands." In *Broadcasting and Convergence: New Articulations*

- from the *Public Service Remit Gothenburg*, edited by Taisto Hujanen and Gregory Lowe, 167–186. Gothenburg: Nordicom.
- Blei, David M., Andrew Y. Ng, and Michael Jordan. 2003. "Latent Dirichlet Allocation." *Journal of Machine Learning Research* 3 (1): 993–1022.
- Bosch, Van den, Bertjan Busser Antal, Sander Canisius, and Walter Daelemans. 2007. *An Efficient Memory-Based Morphosyntactic Tagger and Parser for Dutch*. LOT Occasional Series 7, 191–206. Utrecht: Netherlands Graduate School of Linguistics.
- Broersma, Marcel, and Chris Peters. 2013. "Introduction." In *Rethinking Journalism: Trust and Participation in a Transformed News Landscape*, edited by Chris Peters and Marcel Broersma, 1–12. London, NY: Routledge.
- Chang, Jonathan, Sean Gerrisch, Chong Wang, Jordan L. Boyd-Graber, and David M. Blei. 2009. "Reading Tea Leaves: How Humans Interpret Topic Models." In *Proceedings of the 22nd International Conference on Neural Information Processing Systems*, edited by Yoshua Benigo, Dale Schuurmans, John D. Lafferty, Christopher K.I. Williams, and Aron Culotta, 288–293. Red Hook: Curran Associates Inc.
- Cushion, Stephen. 2019. "PSM Contribution to Democracy: News, Editorial Standards and Informed Citizenship." In *Public Service Broadcasting and Media Systems in Troubled European Democracies*, edited by Eva Plonska and Charlie Beckett, 23–39. New York: Springer.
- Donders, Karen. 2019. "Public Service Media Beyond the Digital Hype: Distribution Strategies in a Platform Era." *Media, Culture & Society* 41 (7): 1011–1028.
- Gerhards, Jürgen, and Friedhelm Neidhart. 1993. "Strukturen und Funktionen moderner Öffentlichkeit." In *Politische Kommunikation*, edited by Wolfgang R. Langenbucher, 52–88. Braumüller: Wien.
- Gransow, Christina. 2018. *Public Value-Konzepte im öffentlichen Rundfunk: Eine vergleichende Analyse*. Wiesbaden: Springer.
- Hall, David, Daniel Jurafsky, and Christopher D. Manning. 2008. "Studying the History of Ideas Using Topic Models." In *Proceedings of the Conference on Empirical Methods in Natural Language Processing*, edited by Mirella Lapta and Hwee Tou Ng, 363–371. Stroudsburg: Association for Computational Linguistics.
- Hallin, Daniel C., and Paolo Mancini. 2004. *Comparing Media Systems*. Cambridge: Cambridge University Press.
- Jacobs, Laura, Cecil Meeusen, and Leen D'Haenens. 2016. "News Coverage and Attitudes on Immigration: Public and Commercial Television News Compared." *European Journal of Communication* 31 (6): 642–660.
- Jockers, Mathew L., and David Mimno. 2013. "Significant Themes in 19th-Century Literature." *Poetics* 41 (6): 750–769.
- Karppinen, Kari. 2013. *Rethinking Media Pluralism*. New York: Fordham University Press.
- Kitchin, Rob. 2022. *The Data Revolution: A Critical Approach to Big Data, Open Data, and Data Infrastructures*. 2nd ed. London: Sage.
- Lowe, Gregory F., and Fiona Martin, eds. 2013. *The Value of Public Service Media*. Gothenburg: Nordicom.
- Lowe, Gregory F., and Jeanette Steemers. 2012. "Regaining the Initiative for Public Service Media." In *Regaining the Initiative for Public Service Media*, edited by Gregory F. Lowe and Jeanette Steemer, 9–23. Gothenburg: Nordicom.
- Manovich, Lev. 2012. "Trending: The Promises and the Challenges of Big Social Data." In *Debates in the Digital Humanities*, edited by Matthew K. Gold, 460–475. Minneapolis: Minnesota Press.

- Mazzucato, Mariana, Rowan Conway, Eleonora M. Mazzoli, Eva Knoll, and Sarah Albala. 2020. "Creating and Measuring Dynamic Public Value at the BBC." UCL Institute for Innovation and Public Purpose, Policy Report (IIPP WP 2020-23).
- Meltzer, Kimberly, and Emily Martik. 2017. "Journalists as Communities of Practice: Advancing a Theoretical Framework for Understanding Journalism." *Journal of Communication Inquiry* 41 (3): 207–226.
- Moe, Hallward. 2010. "Governing Public Service Broadcasting: 'Public Value Tests' in Different National Contexts." *Communication, Culture & Critique* 3 (2): 207–223.
- Napoli, Philip M. 1999. "Deconstructing the Diversity Principle." *Journal of Communication* 49 (4): 7–34.
- Oelke, Daniela, Hendrik Strobel, Christian Rohrdantz, Iryna Gurevych, and Oliver Deussen. 2014. "Comparative Exploration of Document Collections: A Visual Analytics Approach." *Computer Graphics Forum* 33 (3): 201–210.
- Otte, Jedidajah. 2019. "Boris Johnson Challenged over how 'Relatable' He is to General Public." *The Guardian*, November 15. <https://www.theguardian.com/politics/2019/nov/15/boris-johnson-says-brexit-will-realise-potential-of-country>.
- Pedregosa, Fabian, Gaël Varoquaux, Alexandre Gramfort, Vincent Michel, Bertrand Thirion, Olivier Grisel, Mathieu Blondel, et al. 2011. "Scikit-Learn: Machine Learning in Python." *Journal of Machine Learning Research* 12 (October): 2825–2830.
- Porten-Cheé, Pablo. 2017. *Anschlusskommunikation als Medienwirkung. Der Einfluß von Relevanz und Qualität von Medieninhalten auf das Gesprächsverhalten*. Baden-Baden: Nomos.
- Raad voor Cultuur. 2014. *De tijd staat open: Advies voor een toekomstbestendige publieke omroep*. [Time Is Open: Advice for Future-fit Public Broadcasting]. Raad voor Cultuur: Den Haag.
- Raeijmakers, Daniëlle, and Pieter Maesele. 2015. "Media, Pluralism and Democracy: What's in a Name?" *Media, Culture & Society* 37 (7): 1042–1059.
- Ramsay, Stephen. 2010. *Reading Machines: Towards an Algorithmic Criticism*. Urbana-Champaign: University of Illinois Press.
- Schudson, Michael. 1995. *The Power of News*. Cambridge, MA: Harvard University Press.
- Schudson, Michael. 2018. *Why Journalism Still Matters*. Cambridge: Polity Press.
- Schwarz, Jonas A. 2016. "Public Service Broadcasting and Data-Driven Personalization: A View from Sweden." *Television and New Media* 17 (2): 124–141.
- Sjøvak, Helle, Truis André Pedersen, and Thomas Owren. 2019. "Is Public Service Broadcasting a Threat to Commercial Media?" *Media, Culture & Society* 41 (6): 808–827.
- Smith, Anthony. 1979. *Television and Political Life*. New York: Springer.
- Smucker, Mark D., James Allan, and Ben Carterette. 2007. "A Comparison of Statistical Significance Tests for Information Retrieval Evaluation." In *Proceedings of the Sixteenth ACM Conference on Conference on Information and Knowledge Management*, edited by Mário J. Silva, Alberto H.F. Laender, Ricardo Baez-Yates, and Deborah L. Mcguinness, 623–632. New York: Machinery.
- Søndergaard, Henrik. 1996. "Public Service After the Crisis." *Nordicom Review* 17 (1): 107–120.
- Valcke, Peggy, Robert G. Picard, and Miklós Sükösd. 2015. "A Global Perspective on Media Pluralism and Diversity: Introduction." In *Media Pluralism and Diversity*, edited by Peggy Valcke, Robert G. Picard, and Miklós Sükösd, 1–19. London: Palgrave.
- Valcke, Peggy, Robert G. Picard, Cinizia Dal Zotto, Miklós Sükösd, Aleksandra Kuczerawy, and Robin Keremans. 2015. "Indicators for Media Pluralism." In *Media Pluralism and Diversity*, edited by Peggy Valcke, Robert G. Picard, and Miklós Sükösd, 121–155. London: Palgrave.

- Van der Wurff, Richard. 2004. "Supplying and Viewing Diversity: The Role of Competition and Viewer Choice in Dutch Broadcasting." *European Journal of Communication* 19 (2): 215–237.
- Veerbeek, Joris, Karin van Es, and Eggo Müller. 2021. "Professional Follow-up Communication as an Indicator of Public Value: Analysing Dutch PSB's Role in Societal Debates Through Topic Modelling of Press Coverage." *Advance Online Publication in Journal of Communication Inquiry*. doi:10.1177/01968599211039213.
- Waisbord, Silvio R. 2013. *Reinventing Professionalism: Journalism and News in a Global Perspective*. Cambridge: Polity Press.
- Wetenschappelijk Raad voor het Regeringsbeleid. 2005. *Focus op functies: Uitdagingen voor een toekomstig mediabeleid* [Focus on Functions: Challenges for a Future Media Policy]. Amsterdam: Amsterdam University Press.
- Wevers, Melvin. 2017. "Consuming America. A Data-Driven Analysis of the United States as a Reference Culture in Dutch Public Discourse on Consumer Goods, 1890–1990." PhD diss., Utrecht University.
- Wieten, Jan. 1979. "Media Pluralism: The Policy of the Dutch Government." *Media, Culture & Society* 1 (2): 171–180.
- Zelizer, Barbie. 1993. "Journalists as Interpretive Communities." *Critical Studies in Mass Communication* 10 (3): 219–237.

Joris Veerbeek is research and teaching assistant in the Digital Humanities at Utrecht University.

Karin van Es is an assistant professor in the Department of Media and Cultural Studies, Utrecht University.

Eggo Müller (corresponding author) is a Professor of Media and Communication at the Department Media and Cultural Studies, Utrecht University. Email: e.muller@uu.nl