Utrecht University

Bursting the Bubble

Dutch Print Media's Perception of "The Filter Bubble"

New Media and Digital Culture

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Date: 29 June 2023

10475 words (references and appendix excluded)

Referencing style: APA, 7th edition

The myth of the filter bubble, above all, is one thing: a big misunderstanding.

- Axel Bruns (2019, p. 10)

Abstract

The aim of this paper was to discover what Dutch newspapers have written about the concept "filter bubble" and how this discourse has changed over time and across different newspapers. A critical discourse analysis was applied to a dataset collected from the database of *Nexis Uni*, concerning three Dutch newspapers: *de Volkskrant*, *NRC*, and *Trouw*. Results indicated that the concept filter bubble was frequently used in newspaper articles without any explanation. More in-depth newspaper articles were critical about social media and the role that the filter bubble played in spreading fake news. Many articles did not differentiate between the concepts filter bubble and echo chamber. The analysis showed a change in the discourse over time. At first, many articles expressed concerns about the filter bubble, but from 2019 onwards the general attitude in the discourse appeared to become more nuanced. Overall, the discourse was quite similar across the three newspapers. Future research could focus on other (Dutch) newspapers to see how these results compare to the current findings.

Key words: filter bubble, newspaper analysis, critical discourse analysis, echo chamber

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1. Introduction

In the past two decades, a transition has occurred from news consumption through "direct discovery", where people consumed news through traditional news channels, such as newspapers and television broadcasts, to "distributed discovery", where people access information through new media, using social networking sites and online search engines (Toff & Nielsen, 2018, p 636). Nowadays, nearly half of the U.S. adults gets their news through social media (Pew Research Center, 2021). Especially Facebook is a popular platform for news consumption, which is used for this purpose by 31% of the U.S. adults that participated in the survey (Pew Research Center, 2021). Facebook was followed by YouTube (22%), Twitter (13%), and Instagram (11%) (Pew Research Center, 2021). Social media are changing the way content is "produced, distributed, and consumed" (Newman, 2009, p. 2). The introduction of these new media also has consequences for mainstream media. It would therefore be interesting to study how mainstream news organizations are responding to the shift in news consumption from direct to distributed discovery. Nic Newman (2009) studied how journalists at leading news organizations in the UK and US respond to this historic shift. He writes that mainstream media companies "are becoming increasingly worried about the potentially disruptive effect of social media on their business models" (Newman, 2011, p. 6).

Recently, a lot of scholarly attention has been given to the quality and reliability of the information available on social media. Social media platforms allow a higher level of personalization of content than traditional news media (Zuiderveen Borgesius et al., 2016, p. 2). Concerns have been raised that internet users can be placed inside information 'filter bubbles' (Zuiderveen Borgesius et al., 2016, p. 2). The 'filter bubble' concept suggests that the algorithms that are intended to customize and personalize the user's online experience can place them in a 'bubble' where they are only presented with information that matches their established interests and reinforces their existing worldviews (Spohr, 2017, p. 152-153). The concept 'filter bubble' became popularized in 2016, when social media were criticized for misinforming citizens and thereby enabling the Brexit in the United Kingdom and Trump's election in the United States (Bruns, 2019, p. 1; DiFranzo & Gloria-Garcia, 2017, p. 32).

The 'filter bubble effect' has been studied by academic scholars, but not enough evidence has been found to substantiate its existence (Bruns, 2019; Davis, 2018; Ross Arguedas et al., 2022; Zuiderveen Borgesius et al., 2016). On the contrary, research has shown that the use of social media and online search engines can be associated with a more diverse and balanced news consumption (Fletcher & Nielsen, 2018; Ross Arguedas et al., 2022). Despite the lack of evidence, public discourse tends to hold assumptions that filter bubbles are a real problem with harmful consequences (Bruns, 2019, p. 8). Axel Bruns (2019) argues that the persistent use of the filter bubble concept in mainstream media has kept attention away from more important issues (p. 1). Furthermore, the discordancy between the public

understanding of filter bubbles and the scientific knowledge about the concept is fueled by "a simplistic and naïve understanding of media effects" amongst the public, the media, and political actors (Bruns, 2019, p. 8). Bruns (2019) points out that the moral panic that this has caused can be regarded as beneficial to actors that stand to lose something from any change to the current situation (p. 9). According to Bruns (2019) an important question to ask ourselves is: "who benefits from the 'filter bubble' meme?" (p. 9).

Although empirical evidence for filter bubbles has been found lacking, traditional media may continue to use the concept to depict social media as unreliable sources of information to raise their own status as gatekeepers. The mainstream media like to proclaim that only their professional way of gatekeeping can sufficiently inform citizens, while personal gatewatching activities on social media are not capable of such (Bruns, 2019, p. 9). According to Yariv Tsfati and his colleagues (2020), traditional media play a surprisingly important role in the dissemination of fake news (p. 158). They write that the impact of fake news online is actually quite limited (Tsfati et al., 2020, p. 158). Journalists, however, feel obliged to write about such fake news stories and, through this, they unintentionally help spread disinformation across a larger audience (Tsfati et al., 2020, p. 158). As a result, readers who come across this information can learn it to be true, even when journalists confirm it to be false (Tsfati et al., 2020, p. 158).

Until now, the role that mainstream news media can play in the dissemination of fake news and the way this influences readers has only received limited scholarly attention (Tsfati et al., 2020, p. 158). Additionally, little research has been done regarding the way mainstream media are responding to the growing popularity of social media. Also, not much is known about the newspaper coverage of the concept 'filter bubble'. I would like to contribute to the academic field by studying what journalists have recently written about the concept 'filter bubble'. Since previous research has been predominantly concerned with UK and US journalists, I am interested to learn how Dutch journalists respond to the rising popularity of social media. We have previously learned that the term 'filter bubble' became popularized after the Brexit and the US presidential elections in 2016, therefore data will be collected from January 2016 until the start of the data analysis in June 2022. Subsequently, the following research question has been developed: What is the discourse on filter bubbles in Dutch newspaper articles from January 2016 until June 2022? Additionally, several sub questions have been developed: (1) What differences and similarities can be recognized in the discourse about filter bubbles between different Dutch newspapers? (2) How has the discourse about filter bubbles in Dutch newspaper articles changed over time? (3) How does the discourse on filter bubbles in Dutch newspaper articles reflect the power relation between newspapers and new media? In the first section of the paper, a theoretical framework will be provided, describing the fundamental concepts and studies that have been done on filter bubbles

and related concepts. Thereafter, the research method will be described, and an indication of the envisioned research material will be provided. After that, the results of the analysis will be explained and lastly, the conclusion will be presented.

2. Theoretical framework

2.1 Old & New Media

Newspapers have had a longstanding monopoly over the gatekeeping and distribution processes of news among the public (Coleman et al., 2016, p. 109). This meant that journalists could control the media discourse and through that, indirectly, also the thoughts and actions of their readers (Van Dijk, 2015, p. 470-471). This gives journalists a very powerful and influential position. Recently, however, their position is being threatened by new media, such as social networking sites, which are rising in popularity as sources for news consumption. The field of journalism is being transformed and democratized as people increasingly produce and exchange news themselves, rather than consuming professionally produced news items or articles (Coleman et al., 2016, p. 1). Traditional journalism and this emerging form of citizen news-making are being pitched against each other (Coleman et al., 2016, p. 1).

Nic Newman (2009) studied how journalists at leading news organizations in the UK and US deal with this shift in control towards individual consumers. He writes that discussions have raged among news organizations about whether these new media were trustworthy and the threat they posed to traditional journalism practices (Newman, 2009, p. 50). Nic Newman (2011) writes that mainstream media companies are concerned that social media might negatively affect their business models (p. 6). These emerging social media platforms – with their recommendation algorithms – threaten to replace traditionally human jobs, such as that of editor (Newman, 2011, p. 56). According to Newman (2011), "the balance of power has already shifted" (p. 56). However, nowadays, social media have also become an indispensable part of traditional news making and distribution processes. Newman (2009) writes that journalists have started to use social media platforms such as Twitter and Facebook to their own advantage (p. 2). For instance, newspapers often use social media as sources for their news coverage and for the distribution of their content (Hong, 2012, p. 69; Paulussen & Harder, 2014; Welbers & Opgenhaffen, 2019). They share their articles on Facebook and Twitter, using hyperlinks that brings readers to the newspaper's website (Ju, Jeong & Chyi, 2014, p. 1). The goal is to reach a larger audience, and to lure people away from the social networking sites (Ju, Jeong & Chyi, 2014, p. 1). Thus, newspapers are not only threatened by social media, but they also need them. The current research is interested to see if and how this tension in the relationship between print media and new media translates into the discourse about filter bubbles.

2.2. Fake News

The easily accessible, unfiltered stream of information that is made available by social media has frequently been questioned based on the reliability and authenticity of the content. Concerns have been raised that the online environment of social media allows some users to "feel entitled to create their own 'facts'" (Posetti & Matthews, 2018, p. 1). This phenomenon has been labelled "fake news", or "a form of falsehood, intended to primarily deceive people by mimicking the look and feel of real news" (Tandoc, 2019, p. 1). It has been suggested that through liking, sharing, and searching for information, social media can contribute to the spread of fake news (Lazer et al., 2018, p. 1095). The term "fake news" became popularized and politicized during the 2016 U.S. elections (Quandt et al., 2019, p. 1). However, during that time, the term did not yet have a clear definition. As a response to the rise of fake news expressions in public debate, several attempts have been made to define it more precisely (Quandt et al., 2019, p. 1). This has made the term ambiguous and difficult, giving it different meanings in different contexts (Quandt et al., 2019, p. 3).

Even though the term "fake news" has often been related to social media, it is not a new phenomenon (Posetti & Matthews, 2018, p. 1). Misinformation and disinformation have characterized human communication for centuries (Posetti & Matthews, 2018, p. 1). The printing press already made it possible to spread information more widely than before (Burkhardt, 2017, p. 5). With the arrival of the internet in the late 20th century and social media in the 21st century, people were worried that the risk of misinformation and disinformation would increase (Posetti & Matthews, 2018, p. 1). While fake news itself is not new, people are concerned that the speed at which it travels and the global reach of technology will aggravate the problem (Burkhardt, 2017, p. 8).

Studies concerning the prevalence of fake news come up with some interesting results. Research has shown that only a small number of users is exposed to fake news online, but that this limited exposure can still have quite a significant impact (Tandoc, 2019, p. 6). Another study claimed that fake news is harmful and can affect people's beliefs and behavior, even when they know that what they read is fake or when the fake news has been corrected (Levy, 2017, p. 20). Other studies, however, found that the impact and prevalence of fake news among social media users is much lower than anticipated (Lazer et al., 2018, p. 1095; Tsfati et al., 2020, p. 159). Still, some fake news stories are widely known and believed (Tsfati et al., 2020, p. 159). The question, then, remains: how do these fake news stories reach such a large audience? The answer, according to Yariv Tsfati and his colleagues (2020), is that traditional media play a crucial role in the dissemination of fake news (p. 168). Most people that are familiar with the more visible and newsworthy fake news stories are exposed to this information through mainstream media rather than through social media (Tsfati et al., 2020, p. 160). But why? According to Tsfati and his colleagues (2020), traditional news outlets feel compelled to

address fake news stories because they believe they have an obligation to verify information and find the truth (p. 161). The spread of fake news by mainstream media poses a problem because it puts people at risk of internalizing the wrong information (Tsfati et al., 2020, p. 165-167). Being repeatedly exposed to fake news creates a certain familiarity with the false information, increasing the chance that the reader remembers not including whether it is true or false (Tsfati et al., 2020, p. 165-167). Mainstream media thus also play a part in the spread of fake news stories and have a responsibility to limit the widespread of false information.

Since the prevalence of fake news is much lower than anticipated, the concept is not as relevant as seems to be believed. Scholars have even argued against using the term fake news (Tandoc, 2019, p. 3). Still, it is a widely known concept of which the meaning is often confused. The term fake news can sometimes be used as an accusation meant to undermine trust in information that is unfavorable to the party responsible for the claim (Quandt et al., 2019, p. 4). For example, the term fake news has been exploited by political actors who used it to label news organizations as fake news suppliers when they disagreed with what was being published (Tandoc, 2019, p. 3). Over the years, journalists have been accused of being untruthful, and political leaders have wrongfully used the term fake news as a strategic device to their own advantage (Quandt et al., 2019, p. 4). Donald Trump, for example, has appropriated the term fake news and caused confusion about the way the concept should be interpreted by calling information that worked to his disadvantage 'fake news' (Quandt et al., 2019, p. 4). Similar to politicians using the term 'fake news' to undermine the public trust in journalism, journalists may use terms such as 'filter bubble' or 'echo chamber' to undermine public trust in social media.

2.3. Filter Bubbles & Echo Chambers

The concept "filter bubble" was first introduced by Eli Pariser in his book The Filter Bubble: What the Internet is Hiding from You, that came out in 2011. Pariser (2011) was critical on the impact of search engines on internet users. He wrote: "They are prediction engines […] Together, these engines create a unique universe of information for each of us – what I've come to call a filter bubble – which fundamentally alters the way we encounter ideas and information" (Pariser, 2011, p. 30). I already briefly mentioned that the concept "filter bubble" became popularized in 2016. During that time, the results of the Brexit referendum in the United Kingdom and the presidential elections in the United States surprised the media (DiFranzo & Gloria-Garcia, 2017, p. 32). Afterwards, critics blamed social media platforms for allegedly 'influencing their users with fake news' and claimed that 'the echo chamber effect' prevented people from being well-informed about public affairs (DiFranzo & Gloria-Garcia, 2017, p. 32).

Pariser failed to formulate an official definition of the concept "filter bubble", leaving others to try and fill in the gaps themselves (Bruns, 2019, p. 2). As a result, "filter bubble" and the related concept "echo chamber" are often used interchangeably (Bruns, 2019, p. 3-4). However, they are actually two different phenomena (Bruns, 2019, p. 3-4). An "echo chamber" is something that "emerges when a group of participants choose to preferentially connect with each other, to the exclusion of outsiders" while a "filter bubble emerges when a group of participants choose to preferentially communicate with each other, to the exclusion of outsiders" (Bruns, 2019, p. 4). These connective and communicative structures do not necessarily overlap (Bruns, 2019, p. 4). Since the terms were loosely defined when they were first introduced, academic literature contains many different definitions of the concepts "filter bubble" and "echo chamber" (Bruns, 2019, p. 3).

Concerns have been raised that filter bubbles might reduce the number of different opinions that people encounter and foster intolerance toward different worldviews (Zuiderveen Borgesius et al., 2016, p. 3). Another anxiety regarding filter bubbles is that they would give social networking sites too much control over the information that users encounter (Zuiderveen Borgesiuse t al., 2016, p. 4). This would make social media the "new gatekeepers of public opinion" and allow them to shape people's worldviews (Zuiderveen Borgesius et al., 2016, p. 4). The methods that these algorithms use to generate content have also been criticized for lacking transparency (Zuiderveen Borgesius et al., 2016, p. 5). Research, however, has shown no indication or empirical evidence that these worries about the so-called 'filter bubble' are justified (Davies, 2018, p. 638; Zuiderveen Borgesius et al., 2016, p. 10; Ross Arguedas et al., 2022, p. 13-16). On the contrary: rather than narrowing down the information flow that a person is exposed to, social media have increased the diversity of information that an individual comes across (Bruns, 2019, p. 7; Ross Arguedas et al., 2022, p. 13-16). In addition, due to the heterogeneity of people's digital networks, the algorithmic filters have trouble selecting which content fits our personal preferences (Bruns, 2019, p. 7). Therefore, the idea of people existing in a filter bubble of homogeneous information is unlikely (Bruns, 2019, p. 7). Axel Bruns (2019) is critical of the hyperfocus on filter bubbles. According to him, the persistent use of the concepts "filter bubble" and "echo chamber" in traditional media and political debates takes attention away from other, more pressing matters that require scholarly attention (Bruns, 2019, p. 8). Rather than attempting to solve the underlying causes, this technologically deterministic view can cause moral panic among the general population (Bruns, 2019, p. 8).

Here, we come back to the question that was posed by Bruns (2019): "who benefits from the 'filter bubble' meme"? (p. 9). If evidence for filter bubbles is lacking, why is it still talked about in public discourse? Research has indicated that mainstream media have a role in the dissemination of fake news stories (Tsfati et al., 2020). In a similar sense, these media might write about phenomena such as 'the

filter bubble' or 'echo chamber' as an attempt to maintain their monopoly on the gatekeeping and distribution practices of news. The mainstream media are used to being the gatekeepers of information. If they feel threatened by the rising popularity of the internet as a news platform, they might be more inclined to write negatively about social media.

3. Methodology

This chapter contains a description of the research method that will be used to help answer the research question(s). The first paragraph will elaborate on the method and its central concepts. The second paragraph contains a description of the research procedure, including the choices that were made for the selection of the data for the analysis. The last paragraph contains a description of the analysis.

3.1 Critical Discourse Analysis

The current research will use a critical discourse analysis (CDA) to analyze what Dutch print media have written about the concept filter bubble over the past six years. This qualitative method helps understand the role of discourse in constructing the social world (Jørgensen & Phillips, 2002, p. 61). CDA is "discourse analytical research that primarily studies the way social-power abuse and inequality are enacted, reproduced, legitimated, and resisted by text and talk in the social and political context" (Van Dijk, 2015, p. 466). CDA hereby bridges the gap between micro-level and macro-level analysis, looking at both the messages communicated by the discourse and the structural, institutional, and organizational processes that influence the text (Van Dijk, 2015, p. 469). Newsmaking, for instance, consists of acts and choices by individual actors that are also part of larger social processes (Van Dijk, 2015, p. 469). In CDA, every aspect of textual content must be regarded as the result of a "choice" by the person who produced it (Richardson, 2017, p. 40). Meanings in media texts are "encoded" by their producer, but the meaning that a reader "decodes" is also dependent on the context in which the text is read (Richardson, 2017, p. 40). In their evaluation of the meaning of a certain text, people are also affected by their knowledge and judgement of who produced it (Richardson, 2017, p. 41).

The word "discourse" in critical discourse analysis refers to "a particular way of talking about and understanding (an aspect of) the world" (Jørgensen & Phillips, 2002, p. 1). "In the most abstract sense, 'discourse' is an analytical category describing the vast array of meaning-making resources available to everybody" (Wodak, 2011, p. 39). In addition, "discursive practices" refer to the circumstances under which a text is created (production), as well as the way it is received and interpreted by its audience (consumption) (Jørgensen & Phillips, 2002, p. 61). Discourse is "a form of social practice that both *constitutes* the social world and *is constituted by* other social practices" (Jørgensen & Phillips, 2002, p. 61). CDA recognizes the circular process of discourse in the sense that texts (in this case, newspaper articles) are constituted by social practices, but that these texts, in turn, also reproduce certain social relations (Richardson, 2017, p. 42).

The "critical" part of critical discourse analysis refers to both the role of the researcher and the analysis itself. Being "critical" as a researcher means "having distance to the data, embedding the data in the social, taking a political stance explicitly, and a focus on self-reflection as scholars doing research" (Wodak, 2001, p. 9). In addition to interpreting what meanings can be derived from the texts, a researcher must also examine the text in terms of "what is present and what *could* have been present but is *not* present" (Richardson, 2017, p. 38). Furthermore, CDA is also "critical" in the sense that it studies the role that discursive practices play in the maintenance of (unequal) power relations (Jørgensen & Phillips, 2002, p. 63). "A central notion in most critical work on discourse is that of *power*, and more specifically, the social power of groups or institutions" (Van Dijk, 2015, p. 470). CDA recognizes that in discourse "meaning is mobilized in order to maintain relations of power" (Jørgensen & Phillips, 2002, p. 75). Power can be defined in terms of control (Van Dijk, 2015, p. 470). Access to specific forms of discourse can already be regarded as a power source of its own (Van Dijk, 2015, p. 470). But people can also exercise a certain amount of control, and thereby power, over others via discourse (Van Dijk, 2015, p. 470). Those who are in control of the dominant discourse (in this case, news organizations) can indirectly control "the minds and actions of others" (Van Dijk, 2015, p. 470). Furthermore, "CDA focuses on the *abuse* of such power, and especially on dominance, that is, on the ways control over discourse is abused to control people's beliefs and actions in the interest of dominant groups, and against the best interests or the will of the others" (Van Dijk, 2015, p. 470). This makes "access to or control over public discourse and communication [...] an important "symbolic" resource" (Van Dijk, 2015, p. 471). "Members of more powerful social groups and institutions have more or less exclusive access to, or control over, one or more types of public discourse" (Van Dijk, 2015, p. 471). "Those who have more control over more (and more influential) discourse are by definition also more powerful" (Van Dijk, 2015, p. 471). This is for example the case with journalists and media discourse (Van Dijk, 2015, p. 471). The discursive practices of journalists contribute to the maintenance of their position as gatekeepers of information. In-text meanings can therefore be regarded as tools to maintain this position of power. Considering that newspapers have had a longstanding monopoly over the gatekeeping and distribution processes of news among the public, I am conscious of the threat that they may face from new media now that these are frequently used for news consumption, and the tension between the two that might translate into the discourse. The analysis aims to uncover how newspapers use their position of power to influence their audience's thoughts about filter bubbles on social media.

3.2 Procedure

Before the analysis could take place, sources had to be selected from a database that gives access to Dutch national newspapers. These sources were selected according to several criteria: (1) topic, (2) language, (3) date, and (4) popularity. The research material has been selected by accessing the database of *Nexis Uni*. The period of time was selected based on the relevancy of the concept in public discourse as well as the limitations of the current research. We have previously learned that the term 'filter bubble' became popularized after the Brexit and the U.S. presidential elections in 2016 (DiFranzo & Gloria-Garcia, 2017, p. 32). During the selection of sources for the current study, it became evident that the term also became popular in Dutch print media around that time. Since the analysis was set to begin in June 2022, data was collected until that time. Based on this information, a selection has been made of newspaper articles released between January 2016 and the end of May 2022.

Because previous research regarding the way journalists are responding to the growing popularity of social media has been predominantly concerned with UK and US newspapers, the current study wants to find out how journalists from Dutch newspapers are responding to this shift by looking at their discourse on the concept 'filter bubble'. Therefore, a filter has been set to access only Dutch sources. Moreover, in order to analyze the texts that have potentially reached the largest audience, this research was interested in discourse from the most popular Dutch newspapers: (1) *De Telegraaf*, (2) *Algemeen Dagblad*, (3) *de Volkskrant*, (4) *NRC*, and (5) *Trouw*. *De Telegraaf* generated only two results for the chosen discourse. In addition, *Algemeen Dagblad* also generated little results on this topic. Moreover, the results that this newspaper generated were divided among different provincial editions of *Algemeen Dagblad*. However, the current study is interested in the newspaper discourse nationwide. Because of these reasons, these newspapers were left out of the data selection process and the current study focused on the three next-largest Dutch newspapers: *de Volkskrant*, *NRC*, and *Trouw*.

Finally, the data was selected using the keyword "filterbubbel" to find sufficient and appropriate sources. This keyword was settled upon after trying several different combinations of the word, including the term "filter bubble". However, this term only produced 14 results for the desired newspapers. To increase the number of results, I tried a Dutch keyword. The term "filterbubbel" generated the most results (96), while "filter bubbel" showed about 20. For the selected period of time, there were 46 results for *De Volkskrant*, 25 for *NRC*, and 25 for *Trouw* (Table 1). After the data was selected, a critical discourse analysis was conducted.

Table 1

Overview of sources for the analysis

Newspaper	Number of articles
de Volkskrant	46
NRC	25
Trouw	25

Source: Nexis Uni

3.3 Analysis

The first stage of the analysis involved identifying the discourse (see Table 2). The discourse of interest for the current research was what *de Volkskrant*, *NRC*, and *Trouw* have written about filter bubbles between January 2016 and June 2022. The analysis focused on the tension between traditional and new media. The overall analysis was guided by the following questions:

Research question: What is the discourse on filter bubbles in Dutch newspaper articles from January 2016 until June 2022?

Sub question 1: What differences and similarities can be recognized in the discourse about filter bubbles between different Dutch newspapers?

Sub question 2: How has the discourse about filter bubbles in Dutch newspaper articles changed over time?

Sub question 3: How does the discourse on filter bubbles in Dutch newspaper articles reflect the power relation between newspapers and new media?

Data sources were identified through a literature search of the electronic database of *Nexis Uni* (Table 2, Stage 2). The database was queried for the phrase "filterbubbel", with the search restricted to Dutch newspaper articles published between January 2016 and June 2022. The search returned 96 articles for the settled upon newspapers. Due to the limitations of the current research, the social context and producers of the texts were not analyzed (Table 2, Stage 3).

The next stage of the analysis involved identifying overarching themes in the texts (Table 2, Stage 4). The first step of this process was to read all texts multiple times to gain familiarity with the data corpus. During the readings I recorded words and sentences that were potential indicators of themes. Both inductive and deductive coding procedures were used for the analysis. I partially worked with a predefined set of general codes that I used to arrange the data (Table 3). Working with electronic copies of the texts, I marked segments that matched these codes and copied these into an Excel

document. Furthermore, through inductive coding, I discovered several reoccurring themes in the texts. I was able to develop a small number of preliminary categories that captured the most important themes in the data. They are listed in Table 4.

Table 2

General Analytical framework for CDA

Stage of analysis	Description
1. Select the discourse	Select a discourse related to injustice or inequality in society.
2. Locate and prepare data sources	Select data sources (texts) and prepare the data for analysis.
3. Explore the background of each text	Examine the social and historical context and producers of the texts.
4. Code texts and identify overarching themes	Identify the major themes and subthemes using choice of qualitative coding methods.
5. Analyze the external relations in the texts (interdiscursivity)	Examine social relations that control the production of the text; in addition, examine the reciprocal relations (how the texts affect social practices and structures). [...]
6. Analyze the internal relations in the texts	Examine the language for indications of the aims of the texts (what the texts set out to accomplish), representations (e.g., representations of social contexts, events, and actors), and the speakers personality.
7. Interpret the data	Interpret the meanings of the major themes, external relations, and internal relations identified in stages 4, 5, and 6.

Source: Mullet (2018), p. 122

The fifth stage of the analysis involved examining the social relations that play a role in the production of the text as well as the way the text affects social practices (Mullet, 2018, p. 122). During this phase, I examined each text for language that conveyed indications of the journalists' position (Table 2, Stage 5). For the sixth stage of the analysis, I examined the internal relations in the texts (Table 2, Stage 6). In other words, "what the texts set out to accomplish" (Mullet, 2018, p. 122). During this part of the analysis, I focused on linguistic structures, such as word choice and grammar. Fragments that were related to the key themes were listed and described. During the final stage,

findings from previous stages were gathered and analyzed (Table 2, Stage 7). During this phase, I interpreted the meanings from the reoccurring themes in the texts and used them to answer the guiding questions of this research. I also studied the external and internal relations and revisited the structural features and connected them to the broader context and themes identified in the earlier stages. The results of the analysis are discussed in the following section of the paper.

Table 3

Deductive codes for the analysis

Code
Definition filter bubble
Example filter bubble
Mentions social media
Related to academic literature
Mentions fake news
Mentions echo chambers
Mentions mainstream media

Table 4

Important themes

Code
Politics
Polarization
Radicalization
Threat to democracy
Fake news
Pillarization
References to mainstream media
Social media corporations and a position of power
Echo chambers

4. Analysis

This chapter consists of a description of the analysis of the selected newspaper articles. The analysis has been divided into four parts, consistent with the guiding questions of this research. For reasons of clarity, I have provided a full list of references in the back titled "Appendix 1". Here, the three different newspapers have been categorized separately in chronological order (with the oldest article of each newspaper first). In the analysis I will refer to the articles using the first letter of the newspaper they belong to followed by their number on the list. So, for the oldest article of *de Volkskrant*, the reference is "V1", for the oldest article of the *NRC* it is N1, and so forth.

4.1 The Discourse on Filter Bubbles

The analysis showed that there were a lot of articles in which the term "filter bubble" was merely mentioned in a sentence, without the author giving a definition of the concept or explaining to the audience how the concept is supposed to be interpreted. Thus, in many articles the author seemed to assume that the filter bubble exists and that the audience knows what it is. Even though the concept was not clearly defined, the discourse often regarded the filter bubble as something problematic:

> De zondebok is internet: één grote 'echokamer' en 'filterbubbel'. (V20)

The term "filter bubble" seemed to be used to depict the internet and new media as harmful. For example, one article expressed concerns about younger generations that primarily consume news through these "personalized filter bubbles" (V13). Additionally, a journalist from *Trouw* claimed that "digital filter bubbles" can contribute to smartphone addiction (T12). However, there were also articles that mentioned the concept "filter bubble" without giving any indication whether it was something good or bad. It was simply a word that was being used in a sentence. For example, in these types of articles, authors wrote that someone "lived in a filter bubble" or that we had to "break out of our filter bubble" or that certain information "came into our filter bubble", giving the reader the impression that living in a filter bubble is a very real and normal thing. It seems that the term has become submerged in public discourse to such an extent that it can be used in a sentence without a second thought.

The articles contained varying definitions of the concept "filter bubble". For example, an article from *de Volkskrant* about radicalization on the internet explained the concept as follows:

> Doordat zowel zoekmachines als social media met grote algoritmes werken, ontmoeten vooral gelijkgestemden elkaar op Facebook. Als iedereen je gelijk geeft, word je bekrachtigd in je haat en durf je de volgende keer nog verder te gaan. Zo leidt de filterbubbel tot radicalisering. (V11)

According to the authors of this article, big media companies should take responsibility for making the internet a safe place where people will not be provoked or threatened (V11). Again, the filter bubble was regarded as something we should worry about. One article from the *NRC* titled "*Leven in een filterbubbel. Wil je dat? Internet' Datagiganten zuigen ons een ijzig hiernamaals in*", predicted a dystopian future that is "dictated by algorithms" (N25). Another article from *de Volkskrant* was also pessimistic about the effects of the filter bubble but failed to differentiate between the concepts filter bubble and echo chamber (V32). This was a reoccurring mistake in the discourse about filter bubbles.

During the analysis it became clear that there were several themes connected to the discourse about filter bubbles. For instance, the concept was often mentioned in articles about politics. A journalist from *Trouw* addressed how vulnerable people that live in a filter bubble can be, especially in times of elections (T4). He wrote that Facebook and Google spread fake news, which threatens the reliability of information that people come across online. The author also wrote that it is the task of journalists to report accurately on current events (T4). However, even journalists do not always report news objectively, the author recognized. Another journalist from *Trouw* was also worried about the impact of filter bubbles during the elections (T15). She found that the filter bubble was not as problematic as expected. Moreover, she discovered that right-wing conservatives actually have a lot of interaction with left-wing people on Twitter (T15). When talking about filter bubbles in relation to politics, the authors often mentioned themes such as polarization and radicalization. For example, one journalist from *de Volkskrant* disagreed with the idea that filter bubbles lead to polarization (V33). Instead, she believed that polarization has been increased because social media allow people to "dive into someone else's bubble" (V33). The author claimed that, rather than only seeing your own ideas confirmed, social media confront users more with opinions of others (V33). I also analyzed an article from *de Volkskrant* about right-wing radicalization on YouTube (V36). The authors of this article were critical of the recommendation system of this social media platform, claiming that people can end up in a "reactionary right-wing filter bubble" (V36). They did, however, acknowledge that filter bubbles already existed before the internet, in traditional media such as newspapers and television (V36). Throughout the discourse, filter bubbles were frequently regarded as a threat to democracy (V4). A journalist from *de Volkskrant* wrote:

> De filterbubbel is te sterk. Er is geen debat, iedereen krijgt via de filters van sociale media vooral een bevestiging van de eigen opvattingen. Om daar nog doorheen te breken moet je op straat zijn. (V4)

These worries about online filter bubbles have not been confirmed by research. Rather, social media can increase the heterogeneity of people's social networks and offer them more different worldviews and opinions than they would be exposed to offline (Bruns, 2019, p. 7). Regardless, many journalists are explicitly making the filter bubble sound like a problem. One journalist from *Trouw* wrote that the threat of the filter bubble is balanced out because people still get their news through newspapers or other news sites (T6). She still, however, regarded social media as a threat to democracy because she believes they filter our content out of commercial interest (T6).

The discourse also connected the concept "filter bubble" to the election of former president Donald Trump. According to an article from *de Volkskrant*, Facebook had an important role in spreading fake messages during the election campaign (V22). The author blamed filter bubbles and algorithms for being the reason fake news reached such a susceptible audience:

> [...] dat is het probleem met informatievoorziening via Facebook en sociale media: je zit in een feedback-loop die je continu bevestigt in wat je al denkt. (V4)

Furthermore, the authors consistently connected the term "filter bubble" to sections about fake news. Journalists from *Trouw* wrote that social media users can end up in a filter bubble in which they are often confronted with fake news (T10). They wrote that, within these bubbles, messages can circulate for a long time. The problem, according to them, is that false messages in the bubble are often not corrected. Moreover, the authors wrote that filter bubbles have led to strong polarization (T10). They claimed that the impact of fake news has been amplified by the filter bubble effect:

> Mensen zijn in de digitale omgeving van sociale media eenvoudig te beïnvloeden en te manipuleren met ongefundeerde berichten die in hun eigen straatje passen. (T10)

In addition, they emphasized the importance of 'objective' news published by "a recognizable authentic source" in this "like-driven digital world" (T10). They want the government to provide reliable news in the digital environment, based on professional standards (T10).

One journalist wrote that the term "fake news" has been taken out of context and is often used as a tool to label something as unreliable or irrelevant (V28). The author wrote that fake news poses a problem because it is being deployed to "realize political goals toward a predetermined audience" (V28). The filter bubble is an underlying mechanism of this problem, according to the author:

> Uit vrijwel alle onderzoeken naar desinformatie blijken filterbubbels en echokamers een bron van zorg. Nu steeds meer mensen hun nieuws online halen, stijgt de kans op sterk gepersonaliseerd

nieuws. Aangejaagd door algoritmen hoeft men niet meer zelf op zoek te gaan naar informatie die hun beeld bevestigt, die komt naar hen toe. In het slechtste geval veroorzaakt dit een nieuwe vorm van verzuiling die polarisatie in de hand werkt. (V28)

According to the author of this article, the personalization of news online has also made it easier for people to find what they are looking for (V28). She also acknowledged that disinformation can "escape the filter bubble", often because traditional media communicate this information to a larger audience (V28).

Furthermore, an author from *NRC* claimed that the filter bubble plays an important role in the centralization of information on the internet (N2). She proclaimed that our news feed is "invisibly censored" online (N2). The author of the article wrote that this discourages our development and reduces the opinions we encounter that contradict our own worldview (N2). The author was also critical of the fact that the internet allows anyone to advocate their opinion:

Iedereen is gelijk, dus kennis afkomstig van traditionele autoriteiten (wetenschappers, journalisten) staat op dezelfde voet als de particuliere mening van iemand die er niet te lang over heeft nagedacht. [...] Meningen tellen steeds vaker als feiten en de technologie faciliteert supersnelle verspreiding van dit soort feitelijkheden. (N2)

She writes that, unlike what was predicted, we do not often meet people from different backgrounds in our online environment, nor in the offline world (N2). The result, according to her, is a society with little solidarity and low trust.

During the analysis, it became clear that several authors recognized that the "filter bubble effect" is not a new phenomenon, but rather a reincarnation of something that already existed long before social media became popular: the pillarization period (*verzuiling*) (T9, V28, V44). Journalists from *de Volkskrant* wrote that this bubble was much more fixed and predetermined than the "filter bubble" that is currently talked about (V12). They wrote:

Tijdens de verzuiling kwamen mensen ook vooral met één wereldbeeld in aanraking. Dat was pas een bubbel waar je moeilijk uit kwam. (V12)

Another journalist from *de Volkskrant* wrote that, back then, the bubble was involuntary: a person was born into a certain group in society instead of choosing to be a part of it (V44). According to this author, online filter bubbles create communities that are based on people's own beliefs and opinions. According to him, these filter bubbles should not be the cause of concern (V44). They are

temporary, unorganized, and fleeting (V44). Within this bubble, there is only one 'truth' that everyone believes, but these people are still aware of the world outside of that bubble (V44). The author wrote that these people do *not* live in a hermetically sealed environment (V44).

The discourse about filter bubbles also contained some references to mainstream media. An article from *de Volkskrant* reported an interview with a spokesman from the Dutch public broadcasting corporation (NPO). He emphasized that we need a public space organized independently from commerce that can help "pull people out of their filter bubble" and where there is no "fake news" (V15). He regarded the NPO as such a public space, a neutral medium that can give people an unbiased presentation of the news (V15). Another journalist from *de Volkskrant* also praises the NPO on how they plan to "burst people's filter bubbles" by motivating their viewers to watch more programs with high public value (V35). Moreover, a journalist from *Trouw* claimed that modern streaming services such as Netflix and YouTube are susceptible to a "filter bubble effect", while the NPO's algorithms are not susceptible to such an effect (T19).

Furthermore, one author found that local websites newspapers and blogs can have a significant influence on what people talk about on social media (V23). According to this article, informative and trustworthy media channels are necessary for the healthy functioning of democracy. He wrote that even small news channels can break through the filter bubble – if it were to exist (V23).

One journalist from the *NRC* rejected the idea of a filter bubble altogether and rather criticized offline news consumption (N18). He wrote:

> Wie zijn nieuws bij voorkeur online ontvangt, krijgt juist gemengder nieuws dan mensen die hun
> nieuws van televisie en uit papieren krant halen. (N18)

Young people tend to get their news mostly online, while people older than 45 tend to get their news from newspapers and television (N18). According to this article, people who do not actively search for news online tend to have a much more diverse news consumption than people who get their news from a limited number of offline sources. The author also wrote that personalization is mostly caused by self-selection rather than by algorithms (N18). However, being exposed to a more diverse diet of information does not cause less polarization, according to the author. He also agreed with the article by Axel Bruns:

> [Het] onderschrijft in ieder geval de stelling van Axel Bruns in diens boek Are Filter Bubbles Real?:
> de nadruk op het vermeende probleem van filterbubbels leidt de aandacht af van de werkelijke
> oorzaken van polarisatie in cultuur en politiek. (N18)

One last reoccurring theme that could be recognized in the discourse was a connection between social media corporations and a position of power. In an article from *de Volkskrant*, social media companies such as Google and Facebook were criticized for being manipulative and abusing their power:

In plaats van het (machts)vrije netwerk dat de mensheid zou bevrijden, dreigt het internet een platform te worden voor ongebreidelde manipulatie en machtsuitoefening. (V17)

Another journalist from *de Volkskrant* was also very critical about the effect social media have on democracy. The author wrote that constantly being confirmed in your own believes and opinions fuels polarization (V24).

Zo hebben tech bedrijven een nieuw monster geschapen: ze zijn machtig, ze bepalen wat mensen zien én nu ook wat mensen nooit te zien krijgen. Zonder verantwoording af te leggen over de algoritmes die gekleurd zijn door Amerikaanse gevoeligheden. (V24)

The author claimed that tech companies are in an exceptional position of power and accused them of controlling people's news feed without claiming responsibility for it (V24). He is critical about the lack of transparency concerning the way these platforms' algorithms function (V24). However, the position that tech companies find themselves in is similar to the position that news organizations have occupied for many decades. They also get to control what people get to read and what not. The author failed to acknowledge this.

4.2 Connections Between Newspapers

The analysis showed that different newspapers could sometimes respond to each other in the discourse. For example, a journalist from the *NRC* wrote:

Volgens gangbare theorie raken mensen op internet steeds meer opgesloten in hun eigen informatiebubbel [...]. De meest vergaande personalisatie komt van mensen zelf [...]. Die verkokering leidt tot polarisatie in de samenleving, waarschuwen wetenschappers. (N4)

Journalists from *de Volkskrant* responded to this article from the NRC. They wrote:

Een informatiebubbel is het fenomeen waarbij iedereen op social media zich enkel nog omringt met gelijkgestemden en daardoor nooit meer een tegengeluid hoort. [...] Dit kan verkokering en polarisatie in de hand werken. (V8)

Both articles switched between the words "filter bubble" and "information bubble", making the reader assume that these concepts have the same meaning. Moreover, no distinction was being made between the concepts "filter bubble" and "echo chamber".

The authors disagreed about whether it is possible to break out of filter bubble. The journalist from *NRC* wrote:

Van verreweg de grootste invloed op je sociale mediabubble zijn de mensen die je volgt. Een gevarieerde vriendengroep zou je filterbubbel met gemak moeten openbreken. (N4)

The journalist from *de Volkskrant*, however, wrote that it is possible to break out of the filter bubble (V8). This gives an example of how, across the newspapers, there are often disagreements between authors regarding the concept.

4.3 Changes Over Time

During the analysis, it became clear that some changes could be recognized in the discourse over time. First, the moment that the term "filter bubble" started to become popular in the discourse was around the same time as the presidential elections in the US and the Brexit in the UK in 2016. This became clear during the data selection and corresponds with findings in the academic literature.

Furthermore, in March 2017 the discourse responded to an academic article that had been published about news consumption on Facebook. A lot of newspaper articles mentioning filter bubbles were published around that time (Graphic 1). The article was published on March 6th, 2017. On March 10th, 2017, the *NRC* published an article about filter bubbles and Facebook use, claiming that the filter bubble is in fact a problem. The author wrote that "this was confirmed by Italian computer scientists" (referring to the article) (N5). However, the term "filter bubble" was not mentioned once in the article. Moreover, the findings indicated that the selection of content was more strongly influenced by the users themselves rather than by the algorithms (Schmidt et al., 2017, p. 3038). The journalist from the *NRC* acknowledged that "the bubble" was created largely by people rather than by algorithms (N4). However, he labelled these two situations both with the term "filter bubble", concluding 'based on academic research' that the filter bubble exists (N5).

Graphic 1

Number of publications mentioning "filter bubble" shown per month, divided per newspaper
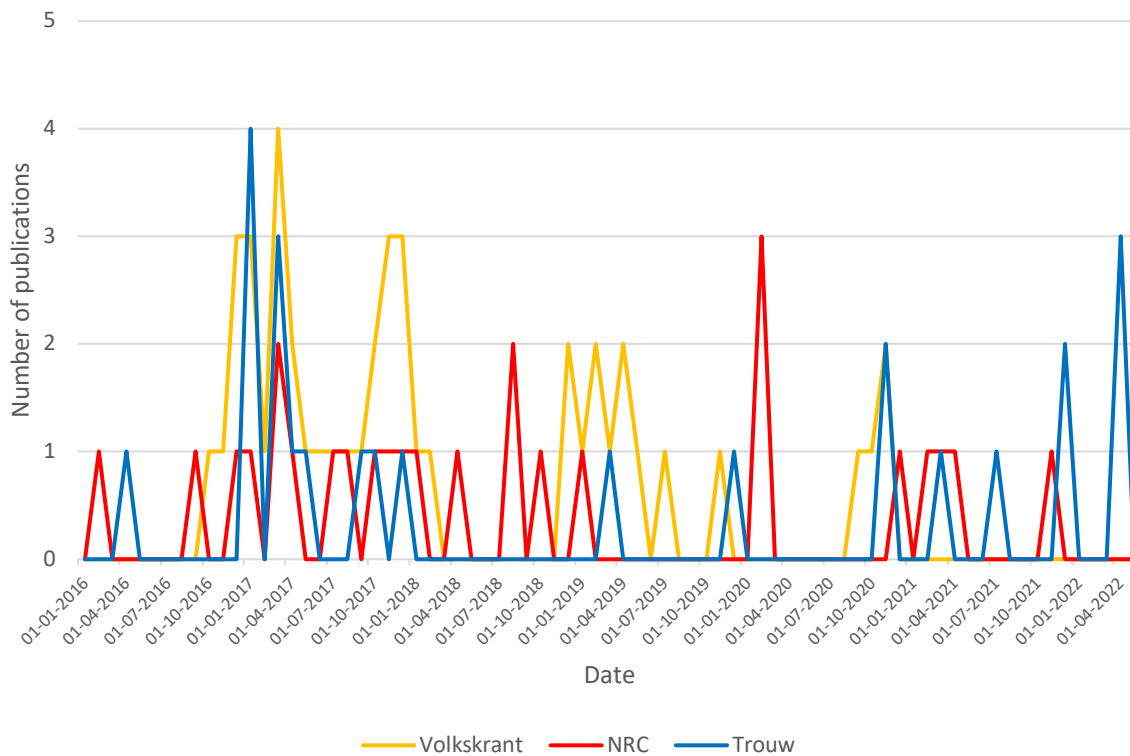
Journalists from *de Volkskrant* also referred to this academic article in a newspaper article published on the 11th of March 2017 (V12). They wrote about a Facebook profile swap that had users experience "another person's filter bubble" (V12). These authors also failed to differentiate between the concepts filter bubble and echo chamber in their definition of the concept. Like in the previously mentioned article, the authors claimed that "a recent scientific study has proven that filter bubbles exist" (V12). The authors claimed that social media platforms make choices that amplify the filter bubble effect. They were critical of social media, and especially Facebook:

> Het platform [Facebook] stemt niet alleen posts van vrienden af op de persoonlijke voorkeuren van gebruikers, maar ook nieuws van 'neutrale' media. [...] Na de verkiezingswinst van Donald Trump ging vrijwel alle aandacht naar nepnieuws en haatberichten op het sociale netwerk [Facebook] [...]. Het bedrijf heeft baat bij de filterbubbel. (V12)

The authors emphasized that Facebook profits from the filter bubble. It improves the user experience, which increases the time people will spend on the platform (V12). The authors wrote that the content of 'neutral' media (such as newspapers) can be miscommunicated through the personalization algorithms on Facebook (V12). They also claimed that Facebook might have played a

role in the spread of fake news which affected the results of the U.S. elections in 2016 (V12). The authors also referred to Eli Pariser:

> De term filterbubbel werd een paar jaar geleden gemunt door de Amerikaanse internetactivist Eli Pariser. [...] De filterbubbel is volgens Pariser een 'persoonlijk, uniek universum waarin je online leeft'. (V12)

Lastly, they seemed to conclude that this "filter bubble" is not a closed-of environment in which people only come across the same information:

> Het lijkt wel mee te vallen hoe hermetisch afgesloten de bubbel is. De meeste mensen halen hun nieuws niet alleen van Facebook en Twitter. In het dagelijks leven kom je altijd mensen tegen met een ander wereldbeeld. (V12)

No big changes could be detected in the discourse for a while after that. Until 2019, when *de Volkskrant* published an article titled "*De filterbubbel zit nog vol gaten*" (V38). The authors questioned the concerns regarding the "filter bubble effect", how it supposedly threatens our personal development and can lead to polarization (V38). They wrote that, rather than algorithms deciding what we find interesting and creating a bubble around us in which we are confronted only with information that confirms our existing worldviews, as is supposed by the "filter bubble effect", people are inclined to surround themselves with like-minded people. The authors acknowledged that this situation, in which people themselves determine who they befriend online and what they get to see, is called an "echo chamber" (V38).

Moreover, they wrote that little evidence has been found to support the "filter bubble effect" (V38). They acknowledged that not enough is known about how algorithms work on social media and no evidence has been found that it might lead to polarization (V38). They also recognized that, contrary to popular believe, social media can even have a positive effect on the diversity of information we come across, because it allows us to meet people that we would not meet offline (V38). They also wrote that people tend to use many different sources at the same time, both on- and offline (V38). They realized that this reduces the chance of people actually living in a closed-off filter bubble. They wrote that only in some cases algorithms might lead to a filter bubble, but that people are still not defenseless against it (V38). The authors also acknowledged that the filter bubble is not a new phenomenon and that concerns about it are misleading:

> Vergelijk dat met de tijden van verzuiling in Nederland. Toen was de samenleving pas echt
> opgedeeld in afgesloten gemeenschappen met verschillende geloofsovertuigingen en sociale
> posities. (V38)

After this article was published, authors from *de Volkskrant* continued to proclaim that the filter bubble is not a reason for worry, until the newspaper stopped writing about the topic altogether in 2021 (Appendix 2, Graphic 2). The discourse from other newspapers also became more nuanced around 2019. However, they did not completely stop writing about filter bubbles. *NRC* only published a few more articles about the topic (Appendix 2, Graphic 3). *Trouw*, however, went on to publish even more articles after haven written barely anything about the topic in three years' time (Appendix 2, Graphic 4).

4.4 Newspapers & New Media

The analysis showed that the discourse frequently addressed the spread of (fake) news on social media and how traditional media fit into this process. For example, authors from *Trouw* talked about the threat of fake news and the circulation of false messages online (T10). They emphasized the importance of objective news from a recognizable authentic source that is easily accessible (T10). They wrote that it is crucial that news is produced based on professional standards. Another author wrote that it is an important task for journalists to report accurately on current events (T4). The discourse criticized social media platforms such as Facebook for turning news created by neutral media into something that might mislead the reader (V12). Moreover, the discourse addressed how social media can be used to deploy (fake) news to "realize political goals toward a predetermined audience" (V28). One author from *de Volkskrant* also considered the role that traditional media can play in the spread of fake news. She wrote that disinformation can "escape the filter bubble" when traditional media communicate this information to a larger audience (V28).

The discourse also repeatedly positioned social media as a "threat to democracy" (T6). Social media were accused of abusing their power and manipulating their users. The discourse was critical of the power position that social media companies occupy. Tech companies were accused of controlling people's news consumption (V24). However, tech companies are similar to newspapers in the sense that they also get to control what people get to see or read and what not. The position of newspaper in this debate was not acknowledged in this article, however. The author of this article wrote that tech companies should be more transparent about the way their algorithms operate (V24). Furthermore, the news feed on social media was criticized for being "invisibly censored" (N2). One article stated that the internet allows anyone to advocate their opinion online. Everyone is equal online, so information posted by traditional authorities (scientists, journalists) becomes worth the same as private opinions (N2).

Opinions are increasingly treated as facts and technology facilitates the fast dissemination of these messages. One journalist from the *NRC* rejected the idea of a filter bubble and rather criticized offline news consumption (N18). He wrote that the people who get their news mostly online tend to have a much more divers news selection than people who get their news from offline sources. This last group tends to access a limited number of sources of their own choosing (N18).

5. Conclusion

This chapter provides a summary of the key findings of this research, followed by a discussion of the implications of the results. The chapter ends with a few limitations and several recommendations for future research.

5.1 Summary

Nowadays, a lot of people get their news from social media (Pew Research Center, 2021). The current research was interested to learn if newspapers tend to be critical about the information that people can find online because social media threaten their monopoly on the gatekeeping and distribution processes of information. I tried to answer the following research question: What is the discourse about filter bubbles in Dutch newspaper articles from January 2016 until June 2022? To achieve this, I conducted a critical discourse analysis of newspaper articles from *de Volkskrant*, *NRC*, and *Trouw*.

One of the guiding questions of this paper was how the discourse about filter bubbles in Dutch newspaper articles reflects the power relation between newspapers and new media. The results indicate that journalists tend to write negatively about social media and the distribution of news on these platforms. They accuse them of allowing the wide spread of fake news, while at the same time raising the status of traditional news media by advocating how (only) they can provide accurate and trustworthy reports of current events. One journalist notably admitted that newspapers have a role in the dissemination of fake news stories. Overall, however, the analysis showed that journalists were very critical of social media, using concepts such as the 'filter bubble' to support their claims.

Other guiding questions of this paper were how the discourse about filter bubbles in Dutch newspaper articles changed over time and across different newspapers. The analysis showed a lot of similarities and some differences between the different newspapers. For instance, some journalists disagreed on the extent to which it was possible to get 'trapped' in a filter bubble. This is an example of how, across the discourse, there are sometimes disagreements between authors regarding the concept. This confusion can be led back to the lack of evidence for filter bubbles and the ambiguity surrounding its definition. The other differences and similarities were mostly related to the changes that could be recognized over time. The concept filter bubble first gained popularity around 2016. During that time, it was frequently used in reference to the Brexit in the U.K. and the presidential elections in the U.S. In 2017, shortly after an academic article appeared concerning news consumption on Facebook, a lot of newspaper articles mentioning filter bubbles were published. In 2019, Laurens Verhagen en Niels Waarlo (V38) contradicted a lot of the assumptions that previously dominated the discourse. For

instance, they addressed that the connection between filter bubbles and polarization is not actually proven (V38). They also wrote that social media can even have a positive effect on the diversity and amount of the sources that we access (V38). They conclude that it is unlikely that we end up in a filter bubble because we also continue to access offline sources (V38). It is interesting to see that the timeline of the articles published by *de Volkskrant* corresponds with that of the academic literature. After this article was published, journalists from *de Volkskrant* continued to claim that the filter bubble was no reason for concern until, eventually, the newspaper stopped writing about the topic altogether in 2021. Following *de Volkskrant*, *NRC* only published a few more articles about the filter bubble, while *Trouw* kept on writing even more about the concept.

5.2 Interpretations & Implications

Because evidence for the concept 'filter bubble' has been found lacking, the question remains why and how this concept continues to be a 'hot topic' in public discourse. Research has indicated that many people learn about fake news stories through mainstream media outlets (Tsfati et al., 2020, p. 160). Additionally, recently people have shifted from using predominantly traditional news channels for their news consumption to accessing news and information through social media. I therefore expected that newspapers may be the reason why filter bubbles are still talked about in public discourse.

The results indicated that Dutch news organizations have indeed done a lot of coverage on the topic filter bubble over the past few years. However, recently the discourse about filter bubbles has changed course. Less articles are published about the concept and those that are published write about it in consideration of the (limited) academic knowledge about the phenomenon. Nowadays, the discourse is less negative, and it contains less assumptions than during the time the concept first gained popularity. In the most recent articles, journalists do not use the concept to make social media seem unreliable as news providers. Considering these changes over time, the findings suggest that journalists do not currently use the term 'filter bubble' as a defense mechanism against the rising popularity of social media. In this regard, the results contradict my expectations. An explanation for this shift in the discourse could be the changing business models of newspapers. Since newspaper organizations have also become dependent on social media for the wider distribution of their content and for research, they have less reason to write negatively about them (Newman, 2009; Paulussen & Harder, 2014; Welbers & Opgenhaffen, 2019; Ju et al., 2014).

Additionally, whether journalists intentionally write negatively about social media or not, they have shared articles about filter bubbles that contained a lot of assumptions that were never proven to be true. Moreover, even though some newspapers have stopped writing about the topic when evidence was found to be lacking, other newspapers, such as *Trouw*, have continued publishing articles about

filter bubbles. In the theoretical framework, I explained that being repeatedly exposed to certain information increases the chance that the reader remembers this information (Tsfati et al., 2020, p. 165-167). However, people often do not remember whether the information they read was true or false. So, even if the articles that *Trouw* continues to publish acknowledge that the filter bubble is not a cause for worry, readers can still internalize the information differently. Thus, readers might think that the filter bubble is a problem, even if the article says it is not. Following the advice of Axel Bruns, newspaper organizations should stop writing about the filter bubble altogether. It has already received too much attention. There are much more pressing matters that we should focus on rather than the unproven filter bubble that some people are so worried about (Bruns, 2019, p. 8).

5.3 Limitations & Future Research

The current study also has some limitations. First, the analysis was limited to a small selection of Dutch newspapers. Analyzing articles from other Dutch newspapers or newspaper organizations from other countries could generate different results. For future research it would be interesting to look at other Dutch newspapers organizations or even other countries to see how these results compare to the current findings. Furthermore, due to limitations of time and availability of data, the current research did not focus on the background of the journalists or the newspapers organizations. For further research it would be interesting to look at the background of the journalists and news organizations to see if they can explain the differences between the newspapers. In addition, since the method that was chosen for this research consisted solely of a critical discourse analysis it is impossible to know the effects these articles have on their audience. A different method would be necessary to establish how readers interpret these texts and if they are indeed influenced by what they read about filter bubbles. Lastly, another suggestion for further research on this topic would be to investigate how newspaper sale rates compare to the changes in the discourse over time to see if newspaper organizations are inclined to be more negative about social media when their sale rates go down. This research has provided new insight into the case of "the filter bubble meme" and the role that news organizations play in this ongoing problem. It demonstrates that journalists must be conscious of what they write about concepts such as the filter bubble. Additionally, the results contribute to a clearer understanding of the relationship between traditional media and new media and gives reason to investigate this further.

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Appendix 1

Volkskrant

V1

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V2

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V3

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V4

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V5

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V7

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V15

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V22

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V23

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V24

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V39

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V40

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V41

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V43

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V44

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V46

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NRC

43

N1

Hoorntje, R. (2016, February 26). Meer van 't zelfde; housen met hoorntje. *NRC*. https://advance-lexis-com.proxy.library.uu.nl/api/permalink/a4edbe82-1aff-4245-b955-951ab27c8e47/?context=1516831

N2

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N3

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N4

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N5

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N6

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N7

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N8

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N9

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N10

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N11

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N12

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N13

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N14

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N15

Takken, W. (2018, August 15). Religieuze leiders over 'hete hangijzers'. *NRC*. https://advance-lexis-com.proxy.library.uu.nl/api/permalink/89515a40-928b-4748-9124-50f0844e38a2/?context=1516831

N16

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N17

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N18

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N19

Van den Bos, M. (2020, February 11). Lees en voed ons algoritme; Algoritmes; Extreem veel nieuws, en iedereen ziet iets anders. *NRC*. https://advance-lexis-com.proxy.library.uu.nl/api/permalink/a92b9562-6f26-4732-8717-855291dcd9e2/?context=1516831

N20

Simon, C. (2020, February 29). Enthousiasme bloeit in een stuurloze tijd; Coen Simon; Ons enthousiasme is morele kitsch geworden. *NRC*. https://advance-lexis-com.proxy.library.uu.nl/api/permalink/b53b8451-c5a8-49c3-86e8-9a8b674fe641/?context=1516831

N21

NRC. (2020, December 2). Laat je wereldbeeld los. https://advance-lexis-com.proxy.library.uu.nl/api/permalink/c2e0565f-c88f-41db-950f-02a9841d9b29/?context=1516831

N22

Heijne, B. (2021, February 6). Almachtig én ongehoord; Het gekwetste ik; Waar komt die combinatie van slachtofferschap en uitzinnig narcisme vandaan, vraag zich af. *NRC*. https://advance-lexis-com.proxy.library.uu.nl/api/permalink/ee26612a-4d04-4ea3-a274-d6010f97888c/?context=1516831

N23

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N24

Simon, C. (2021, April 3). We accepteren alles en vertrouwen niks; 8 Coen Simon; Is er nog een manier om het gezag van de overheid terug te krijgen? *NRC*. https://advance-lexis-com.proxy.library.uu.nl/api/permalink/0c52c341-c8b6-490f-9c16-1b3917cc09ec/?context=1516831

N25

Sadin, E. (2021, November 27). Leven in een filterbubbel. Wil je dat? Internet; Datagiganten zuigen ons een lichaamloos en ijzig hiernamaals in. *NRC*. https://advance-lexis-com.proxy.library.uu.nl/api/permalink/9221f5a1-7309-4442-8117-a6ff97ff4de2/?context=1516831

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T2

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T3

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T4

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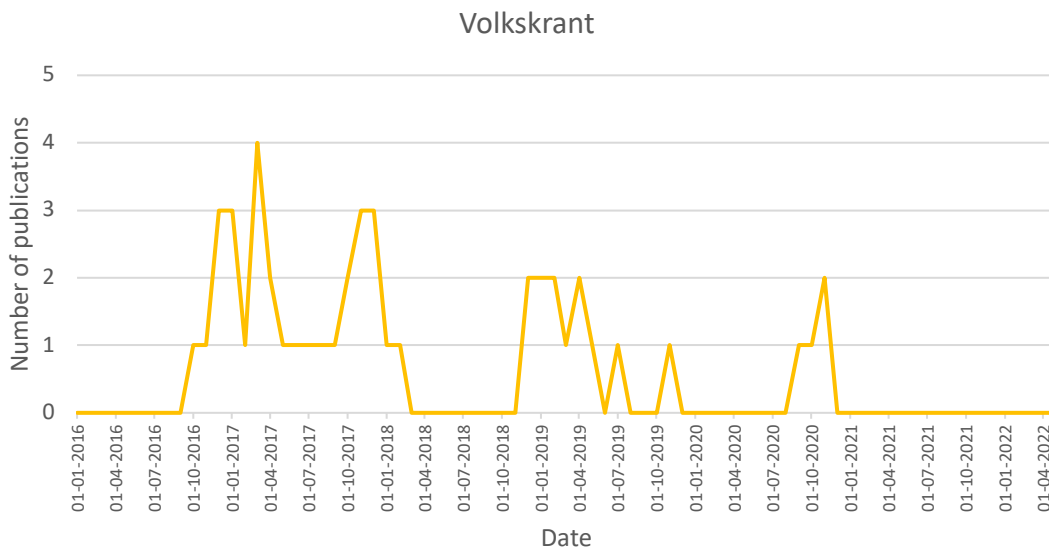
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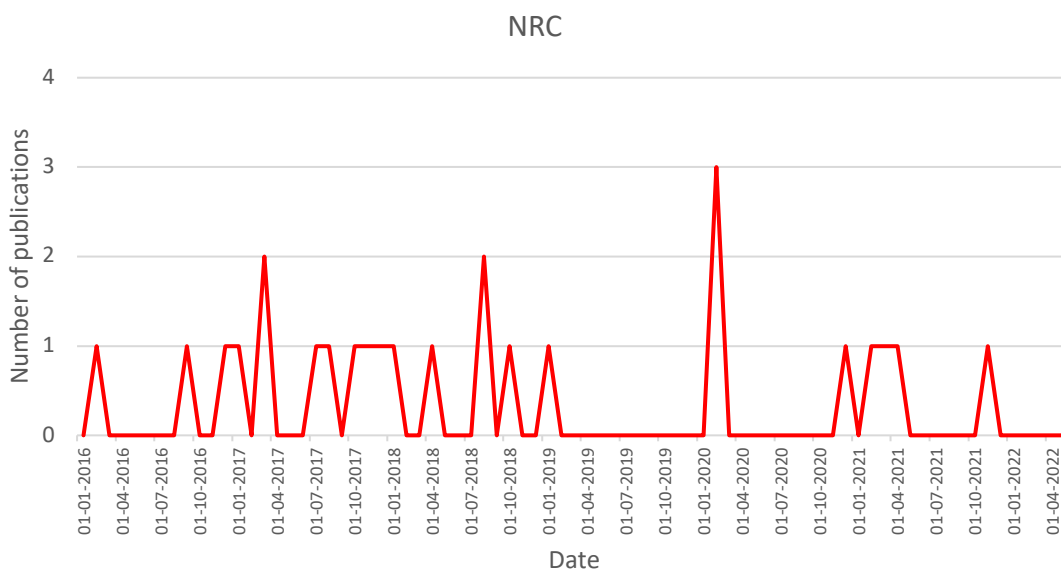
Appendix 2

Graphic 2

Number of de Volkskrant *publications mentioning "filter bubble" shown per month*

Graphic 3

Number of NRC *publications mentioning "filter bubble" shown per month*

Graphic 4

Number of Trouw *publications mentioning "filter bubble" shown per month*