

FILTER BUBBLES IN THE NETHERLANDS

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Does the Netherlands have Filter Bubbles?

There has been a big increase in the number of news media outlets over the past few decades. The internet has been particularly instrumental in the development of new ways of distributing media content, adding to trusted sources such as television, newspapers and radio. The substantial increase in the number of media sources now available on-line, has, however, caused overall supply to become increasingly fragmented. The times when we'd have to sit through an entire episode of the evening news, or found ourselves sifting through the morning papers, have gone. We're now in a position where we can assemble our own media diet, using singular news items sourced from a range of outlets. We now decide for ourselves what it is we want to watch and read, no longer requiring the editing room to do it for us.

That in itself is a good thing, as having a diverse range of media sources to choose from is a building block of democratic society. A lack of sound, and diverse, news sources will not enable the people to make the informed decisions they need to take to allow their democracy to function.

There is very little need to fear such a lack of diversity in the on-line environment. It caters to all tastes. The question is, however, how much of that seemingly endless array of news actually reaches users? Which of these sources do they employ and who are these users? The changing media landscape, with news now being made available in so many different ways, will not automatically see that diversity of sources and news reach its users.

The fact that users now have so many news options at their disposal and no longer need anyone selecting their news for them, does not mean it isn't still being selected. Search engines and on-line platforms, especially social media, use algorithms to recommend users what they should be viewing and therefore what is shown to them. This can affect the level of diversity of the news on offer to them. This is also referred to as exposure diversity. Quite naturally, the level of exposure diversity is increased when users take in what they're offered in a diverse way. These algorithms may also cause the user to no longer be shown certain content, e.g. content of a nature that lies beyond the user's indicated or analysed fields of

interest, leading to a drop in the level of exposure diversity. This could see news-recommending algorithms encapsulating the user inside a bubble of like-minded information, a so-called filter bubble, the nature of which sees it has a low level of exposure diversity.

Under Dutch law, the Dutch Media Authority is the regulatory body entrusted with overseeing the independence, diversity and accessibility of the media in the Netherlands. The Authority's annual report, the Media Monitor, includes a specific review of the diversity of news usage. In light of the potential risk posed by filter bubbles,¹ the Authority decided to commission the University of Amsterdam's Information Law Institute [Dutch: *Instituut voor Informatierecht*] (IViR) to look into the extent to which filter bubbles can be found to exist in the news usage of Dutch people.

Diversity of News Usage

An initial international survey of the literature available on this issue² showed that studies conducted into the effects of algorithmic filtering were unable to draw any unambiguous conclusions on this. Experimental studies more limited in size did yield some indications on how algorithms create filter bubbles, but mainly focussed their attention on the US situation, i.e. one not bearing a great deal of resemblance with the situation in the Netherlands. For example, Dutch news items aren't as easily labelled either liberal or conservative in the way they are in the US. On top of that, the Dutch media landscape boasts a strong state broadcaster that enjoys a dominant role in the provision of news and information. This called for more in-depth research into the existence of filter bubbles in the Netherlands.

The study into the Dutch situation was based on two presumptions. The first of these demanded that all users locked inside a particular filter bubble only be fed news that had been filtered for them by algorithms. The second required these users to lack any interest in having any sort of diversity in their intake of news and to only be on the lookout

¹ The term 'filter bubble' has since been interpreted in a number of different ways and awarded a range of meanings. For this reason, we would like to take this opportunity to explicitly state that in this report a filter bubble should be understood to refer to a recommending-algorithm-induced bubble of like-minded information only, and does not refer to all forms of one-sided information.

² In 2018 the Authority asked the IViR for an overview of the international studies available on the algorithmic filtering of news to aid a report it was drafting in a joint effort with The Netherlands Authority for Consumers and Markets (ACM).

for select and specific content. Three different research methods – questionnaires, digital tracking data and social media data – were used to disclose whether these assumptions applied to Dutch news users. The survey saw three hundred individuals consent to their on-line activity being tracked over an 18-month period from January 2017 to June 2018. Questionnaires were filled out by more than eight hundred respondents.

The results showed the on-line news the Dutch take in to largely not be recommended to them by any algorithm. They keep having a very diverse range of news and information at their disposal, even within algorithmic filtering systems. It turns out that only two out of every ten news items people take in were recommended to them by an algorithm. This percentage was not found to have risen in the November 2015 - May 2017 period.

People who take an interest in the news are found to increase their news usage as a result of their use of social media, which in turn only leads to an increased diversity of their news usage. Nevertheless, only three or four out of every one hundred Facebook user time line items were, in fact, found to be news items. Certain groups, like older users, or lower-educated ones, however, do run a greater risk of becoming locked inside a filter bubble. Despite this, the IViR was nevertheless able to confirm that hardly anyone in the Netherlands could be found fully locked inside a filter bubble, with the main cause for this being their access to and use of non-algorithmically filtered sources.

Monitoring independent and diverse news usage nevertheless remains an issue of great importance. What type of news sources do the Dutch actually use? How diverse is their news usage? Reuters' 2018 Digital News Report showed the Dutch to at a minimum make use of different types of media as well as different types of news brands. It found them to use an average of 3.3 different types of media (e.g. TV, newspapers, radio, websites) and 5.2 different types of news brands (e.g. NOS, NU.nl, De Telegraaf). The Dutch Media Authority will continue to monitor both the level of diversity in the use of news titles among Dutch people and how many of them receive their news intake exclusively through social media platforms.

Algorithms and Opinion Power

The simple fact that there is currently little need to be worried about filter bubbles in the Netherlands, does not mean that no cause for concern exists about the increased effects the increased employment of algorithms and AI has on society. In their report, the IViR researchers also point to the risks that accompany this development. The filter bubble issue has turned attention to the individual and the potential effects algorithmic selection has on his news consumption. The researchers point out that algorithms and AI aren't exclusively employed on on-line platforms, but are increasingly also utilised among traditional news media outlets. Collected

data has led to audience preferences having an increased influence on editing decisions within the newsrooms of those outlets.

The IViR report calls for more attention to be paid to the increasing opinion power enjoyed by the platforms, a new factor of interest to the news market. Their technical features facilitate a certain measure of political discourse, with that in itself already enough to potentially render them significant political power. Contrary to traditional media outlets, on-line platforms share their power with their users. The fact that these platforms make user generated content available, does not mean that editorial choices aren't being made. This is done not only by removing certain content, but also by making certain specific content accessible to users through the help of algorithms. Furthermore, and contrary to practice at traditional media outlets, these platforms offer political parties direct access.

The Authority will continue to monitor the development of the information and news provision in the Netherlands. Though we will continue to track news usage through the Reuters Digital News Report, we will also pay particular attention to the changes taking place on the various media markets through our Media Monitor. And we will not hesitate to team up with researchers to take a more in-depth look at matters whenever new indications and future risks to news provision arise.

European Connection

As it is an important prerequisite for attaining a high level of exposure diversity, the Authority aims to increase the individual's ability to access a diverse range of news sources either through, or in spite of, algorithmic filtering. One option also suggested by the EU High Level Group on Disinformation report in this respect could be to have algorithms award a higher prominence to certain topics which, though they might not necessarily match the individual's profile, are nevertheless relevant.³ Furthermore, with it being an active member of the ERGA – a forum of European regulators – the Authority will endeavour to have the importance of exposure diversity also put on the agenda at the European level. This is why the Authority will continue to strive for the editorial independence of algorithms, making sure citizens continue to enjoy access to a diverse range of news sources and the requirements for exposure diversity are met. And last, but not least, and as also stated in the EU's Audiovisual Media Services Directive, we want to also contribute to increasing media awareness and digital literacy among citizens. This will also increase the level of empowerment among citizens, while limiting the effects of opinion power and algorithms.

³ Final Report of the EU High Level Group on fake news and disinformation, Brussels 2018.

FILTER BUBBLES IN THE NETHERLANDS?

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Filter Bubbles in the Netherlands?



The introduction of algorithmic filtering and artificial intelligence in news dissemination has fundamentally changed the way news is consumed and distributed. While there is a clear benefit to the user, by making relevant stories accessible and therefore providing a way forward to manage the information overload, many have expressed concerns that it also leads to atomized societies where citizens are locked in filter bubbles. In this report we set out to answer the question: Do filter bubbles exist in the Netherlands?

In order to answer this question, we first need to make clear what filter bubbles are exactly. The term has been put forward by internet activist Eli Pariser. According to him a filter bubble is a "personal ecosystem of information that's been catered by these algorithms to who they think you are".⁴ This implies that algorithmic filter systems detect what we think and what we think about, and henceforth deliver us with a perpetual echo of our thoughts. Invisible to us we are no longer challenged by information that challenges our belief systems and fosters tolerance in society. Let us illustrate this process with an example: Alice believes firmly that the earth is flat. She logs into a social medium for the first time. Then, she connects with others that share her beliefs, she clicks on a number of news articles that provide her with evidence in line with those beliefs, and she decides to share these articles with her network. All these actions create signals to the filter system that sorts the content she is exposed to on this social medium. Using complicated algorithms that include semantic sorting, and collaborative filtering the artificial intelligence selects a number of pieces of content Alice is presented with in her timeline. According to the filter bubble argument, these items are all going to confirm Alice in her belief. As she logs out of the social medium she is even more convinced that she is right. On a larger scale this process means that all of us are moved away from what is shared to what sets us apart. Societies would become fragmented and polarized, if our information intake was curated in filter bubbles.

However, there is a growing body of academic research that questions the existence of filter bubbles. Surveys have

shown that while users appreciate algorithmic curation (Thurman et al., 2018), they do not want to use it at the expense of access to diverse information (Bodó et al. 2018). However, for many users this is not even a real trade off. In fact, algorithmic filter systems provide a majority of users with more diverse information (Fletcher & Nielsen, 2017). Yet, a number of experimental studies (e.g., Dylko et al. 2017, Quattrociocchi et al., 2016) have provided evidence that theoretically filter bubbles can exist under laboratory conditions (for an extended overview see also Moeller & Helberger, 2018). So why have we not observed them outside of the lab by now?

This might be related to two **assumptions** that underly the filter bubble theory. The first is that people inform themselves about the world **exclusively through algorithmically curated sources**. The second is that these users are not interested in diverse information but **appreciate only a very limited selection of content**. The experiments in the laboratories show that if both conditions were met, the concerns about filter bubbles would be very valid.

In this report we will analyze to what extent these assumptions are being met in the Dutch case. Using three different methods (survey research, digital trace data, and analysis of social media data) we will show that users still make ample use of unfiltered news online, and by and large have access to diverse information even within algorithmic filter systems.

Trends in access to personalized news

To assess in how far algorithms are currently determining what kinds of news Dutch citizens have access to, we make use of panel survey data we collected among a representative sample of the Dutch population. In total 824 participants were included in the analyses. The first data was collected in November 2015 and the last in May 2017 in half year intervals. The recruitment of the panel and distribution of the questionnaire was administered by CentERdata using their LISS panel. To determine the share of algorithmically curated news use, we asked online news users how many out of 10 online news articles they access via (1) directly surfing to the news website,

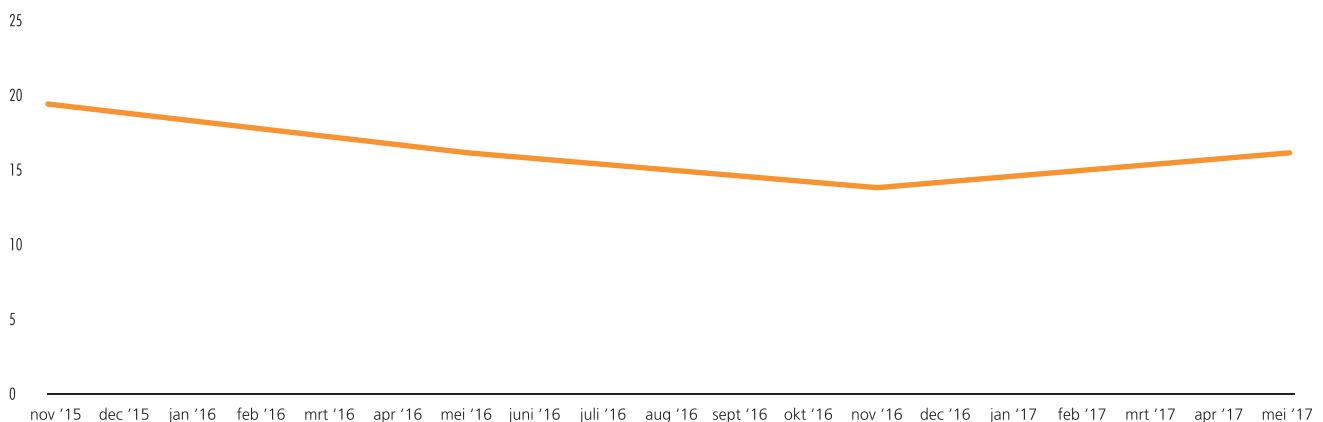
⁴ <https://www.theatlantic.com/daily-dish/archive/2010/10/the-filter-bubble/181427/>

(2) a news app, (3) a news aggregator, (4) a link on Facebook or (5) Twitter or (6) elsewhere on the internet, or (7) in another, unspecified way. Then we combined the third, fourth and fifth category, into our main dependent variable.

We find that on average users claim to receive about two out of ten news stories through algorithmically filtered systems. Given that the technologies to algorithmically select news stories were still developing, it would be reasonable to assume that the share of news stories people receive through algorithmically curated news sources would increase over time. This is not the case in the Netherlands (see Figure 1). Over these two years our respondents reported almost stable use

of algorithmically curated news. We furthermore observe a decline in use of this kind of news leading up to the fall of 2016, afterwards we see a small recovery from the downward trend. Though not statistically significant, these trends indicate that the use of algorithmically curated news can be affected by public debate. In the period leading up to the presidential elections in the US, the influence of algorithmic filters on news use were under immense scrutiny, especially after the surprising results of the British EU referendum. However, our findings also show that once the public debate becomes less intense, people return to use algorithmic curators for a small share of their news use.

Figure 1
Mean percentage of algorithmically curated news use online

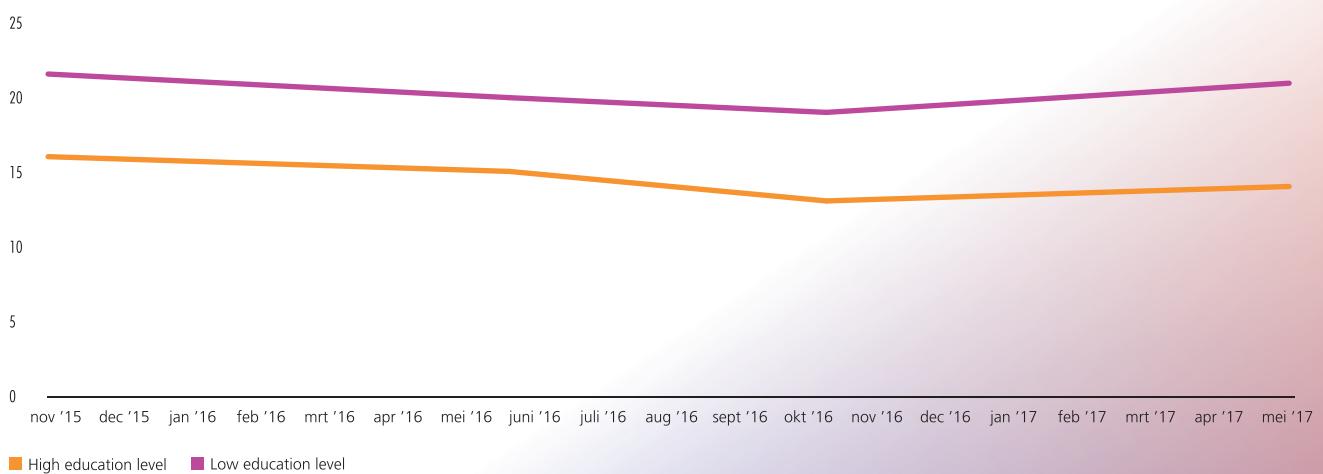


With regard to the filter bubble hypothesis, our results are clear. We find no significant differences in use of algorithmic news between those on the political left and those on the political right, neither is there any significant impact of how extreme this ideological standpoint is. This implies that the core idea of a filter bubble that separates the Dutch society into ideological camps cannot be substantiated. However, we do find a number of notable differences related to a number of other variables of interest, in particular use of legacy media, confidence in one's ability to participate in politics (political efficacy), age, and education.

Education

Figure 2 shows the share of algorithmically curated news use by different educational levels. Those whose highest level of education is VMBO (Pre-vocational secondary education) or equivalent to VMBO get nearly a fourth of their online news through algorithmic filters. Those who have graduated from higher education institutes like universities get only about 15% of their news through those systems. Interestingly, this group also does not follow the general trend to start using algorithmically curated news systems more in 2017. They remain more skeptical in their behavior.

Figure 2
Share of algorithmically curated news use online by educational level



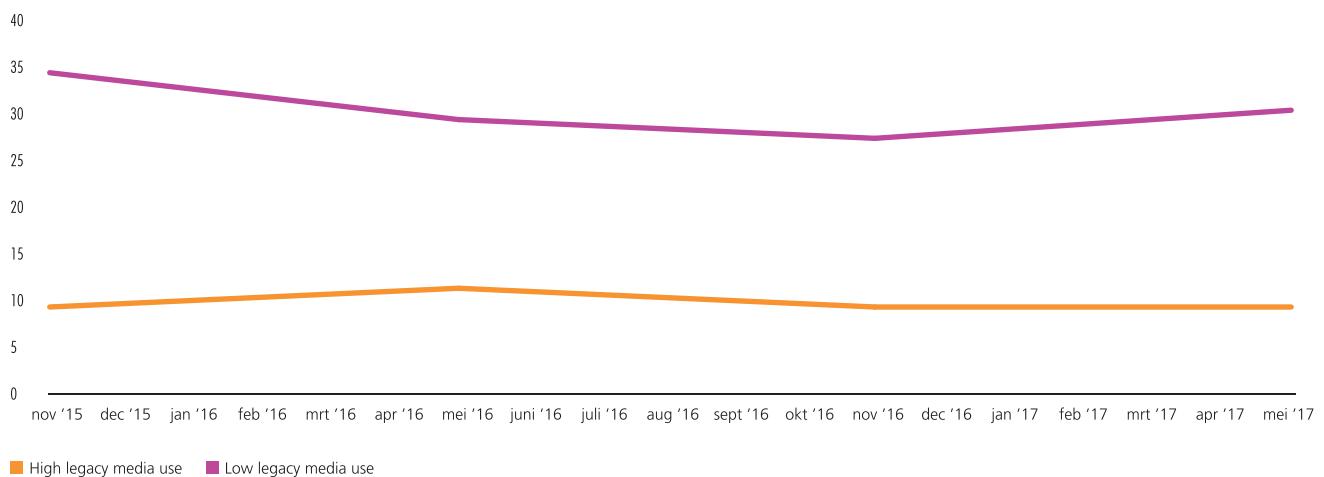
Legacy Media Use

We find an even larger difference if we compare those who make devoted use of legacy, offline media, in particular reading newspapers or watching TV. Those who use those media less than two days a week get almost a third of their news online through algorithmically curated sources, whereas those who report to use legacy news six or seven days a week get less than 15% of their news online through algorithmically curated sources. It should be noted

that a third out of the overall news consumption, means that the majority of news is still consumed in other ways. Nevertheless, it is alarming that those who use the least amount of unfiltered offline media, are such avid users of algorithmically curated news. If filters were used to strategically misinform them, they have the least opportunity to counter balance that information with information they receive offline.

Figure 3

Share of algorithmically curated news use online by legacy media use



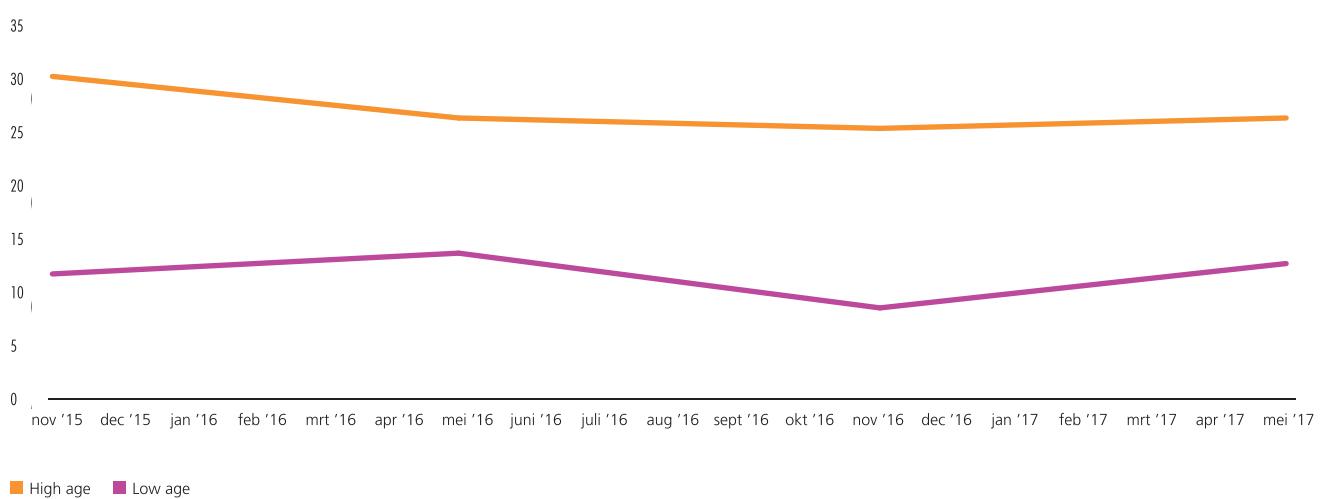
Age

Contrary to the common conception that younger people adopt technology more quickly, we find that young users (born after 1970), get less than 15% of their news use online through algorithmically curated sources. Users born before

1947 on the other hand receive about 30% of the news online through algorithmically curated systems. Having said that, it is important to take into account that this age group consumes significantly less news online.

Figure 4

Share of algorithmically curated news use online by age



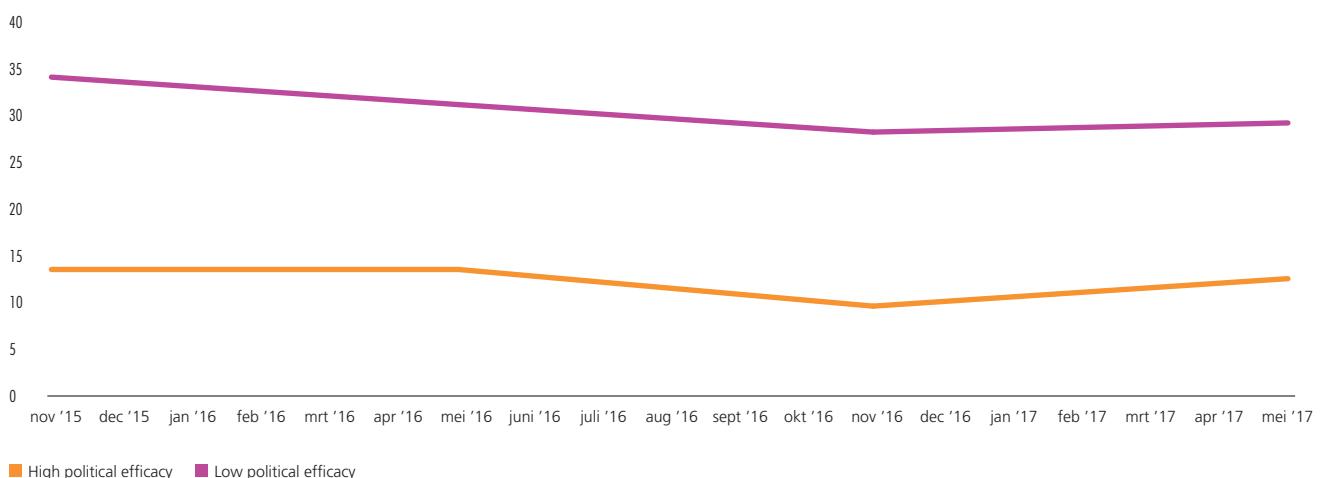
Political Efficacy

Finally, we would like to discuss the significant differences between respondents that reported high levels of political efficacy and respondents with lower levels of efficacy. We measure efficacy using the item "I have a good idea about the most important problems in our country" on a seven point scale. Those who disagreed with this item (low efficacy), also report that they get a third of the news they consume online through algorithmically curated filter systems. Those respondents who have the highest confidence in their understanding of the most important issues in the Netherlands say they get less than 15% of their

news through algorithmic sources. This is remarkable, in relation to the finding about legacy media. Combined these two findings imply, that those who say they have the least political literacy and consult unfiltered offline news the least, are most likely to receive algorithmically curated news. In other words, the group that is most vulnerable to the risk of filter bubbles, namely to receive biased information or even being misinformed, is also the most likely to be in one. We want to reiterate that at present this is not the case. They still receive the majority of their news through other sources. However, prospectively, this is a concern.

Figure 5

Share of algorithmically curated news use online by political efficacy



To test whether the differences we presented above are not a consequence spurious correlations, we ran Maximum Likelihood Regression analysis controlling for a range of va-

riables. Table 1 yields the results of the regression of factors predicting the share of algorithmically curated news stories consumed online as reported by the respondents.

Table 1

Factors predicting the use of algorithmically curated news

Variables	Coefficients Random Effects
Concerns about privacy	0.0165 (0.0372)
Use of Legacy Media	-0.107*** (0.0337)
Political Efficacy	-0.111*** (0.0386)
Year of Birth	0.0330*** (0.00537)
Gender	0.513*** (0.150)
Education	-0.216*** (0.0495)

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Generally, our findings indicate that there are large differences in the use of algorithmically curated news. Interestingly factors like privacy concerns and political ideology, often associated with discussions surrounding algorithmic filter systems, do not have a significant impact on using news curated by algorithms. Yet, we find that older citizens, who feel less confident in their political skills and knowledge, are of lower education and consult less legacy media such as newspapers or TV news a significantly larger share of their news online through algorithmically curated sources.

Pathways to news: news sources, search and social media

In order to observe how users access news online we tracked a representative⁵ sample of the Dutch population online using a browser plug in over the course of 18 months between January 2017 and June 2018. The participants were recruited by a panel company (CentERdata). A total of 302 participants took part in the study. After they agreed to take part in our study, participants installed a Google Chrome or Mozilla Firefox plugin which tracked all incoming and outgoing traffic for a list of 317 selected domains, that included all major Dutch news sites, such as national and regional newspapers, TV news, radio news, and online only news. The plugin routed all HTTP/HTTPS traffic related to these domains through a secure VPN proxy that served as a data-collection point. As such, all webpage content was captured. Before storage, best-effort anonymization scripts removed sensitive information. Demographic information, self-reported news consumption, political interest, political efficacy, and political extremism data was collected through an online questionnaire run by the panel company after the plugin was installed. For a more detailed description of the tool and sample see (Bodó et al., 2018, Moeller et al., 2019).

We were interested in the pathway Dutch users typically take to get to news online. Should users primarily rely on algorithmically curated pathways, there would be a higher risk of filter bubbles. Therefore, we distinguished between three different access paths. The first is visiting the homepage of a news outlet directly. We also counted instances of users that used a search engine as a navigational tool (typing in Volkskrant in a search bar). We consider this access path as unfiltered, since, at present, algorithmic curation is hardly present on Dutch news homepages. In addition, we learned in interviews with news organizations (Bodó, 2019), that even if algorithms are introduced to the homepage of legacy media in the Netherlands, it is done with great caution to avoid potential risks of filter bubbles. The second access path is through social media. This includes all visits that directly lead from a social medium such as Facebook or Twitter to a specific news item

(and not the homepage of a news organization). Finally, we were interested to find out how often users select to engage with news they encounter as part of an information search on a search engine. Both of these access paths are algorithmically curated, however, the parameters of the curation are very different. While a news feed on a social medium is highly personalized, search results on a search engine are not.

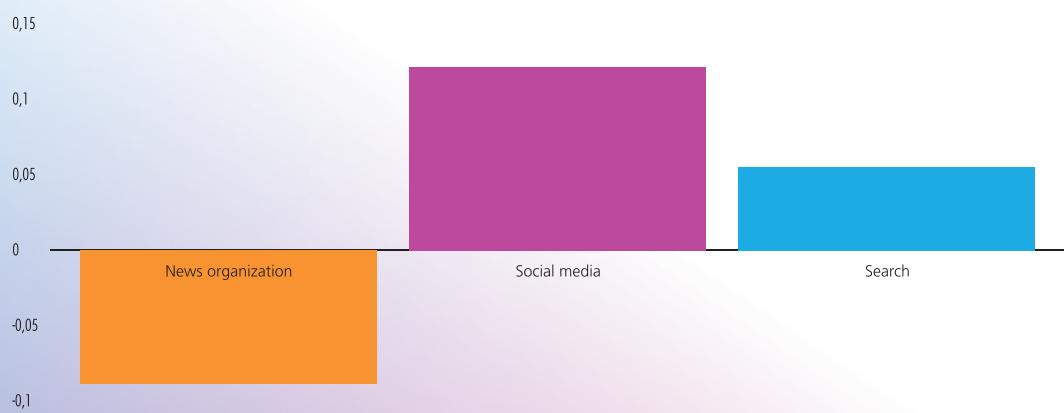
Our results indicate that search and direct access on news websites are the most widely used access path to news in the Netherlands. Of all 302 respondents, 81% accessed news through search at least once, 79% accessed news directly on the homepage of a news organization at least once, and 50% directly moved from a social medium to a specific news item at least once. However, if we compare how often users use these different access paths, the most common pathway to news is still the homepage of a legacy medium. Participants in our panel used this path on average 53 times, compared to 13 times for search and 8 times on social media.

To predict whether certain groups of the Dutch population have a preference for specific access paths, and are therefore more at risk to become enclosed in a filter bubbles we ran regression analysis using zero inflated Poisson models. The model fit was acceptable and significant (for details on the analysis see Moeller et al. 2019). In the following we will focus on interpretation of the count portion of the regression model. That means we aim to understand which factors can explain why some users use one access path more often than others.

Political interest

The strongest predictor for preference for an access path was political interest. We find that news users with higher levels of political interest are more likely to encounter news through social media and to a lesser extent triggered by an information search. Figure 6 displays the effect strength of higher levels on political interests on the likelihood to access news more often for the three access paths.

Figure 6
Coefficient strength predication news pathway ratio for political interest



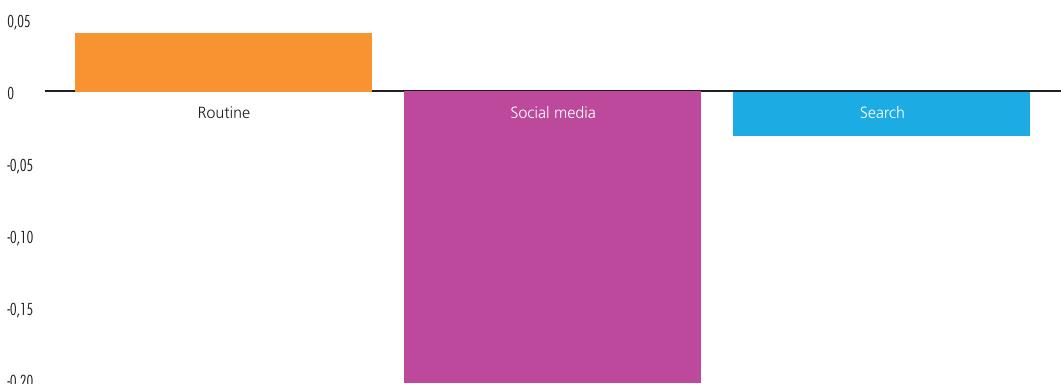
5 <https://www.theatlantic.com/daily-dish/archive/2010/10/the-filter-bubble/181427/>

Extreme political views

According to the filter bubble argument ideological extremism should be associated with a preference for algorithmically curated news, in particular in social media. This reasoning is core to the filter bubble hypothesis. Yet, we did not find this in our data. In fact, we observe that political extremism is not associated with any preference for news modes.

Figure 7

Coefficient strength predicated ratio of news pathway for trust in legacy media



These results indicate that the question whether algorithms pigeonhole Dutch society is actually misleading. Our results indicate that the impact of algorithms on news consumption is a different one: those who are already interested in news gain access to more news through social media. And these are often those citizens who no longer trust legacy media. Internet users with lower levels of political interest on the other hand, are served less information on current events on social media, but still have access if they actively seek out information using search engines.

Trust in news media

Finally, our analysis yields a positive relationship between trust in news and preference for accessing news directly on the homepage of news organizations. We find a relatively strong negative effect of trust in media on preference for news gathered through social media implying that the more users distrust media the more likely they are to receive news through social media (see Figure 7).

Social Media News Density

To get a better understanding of what kind of news Dutch citizens receive on social media we used the same tool as described above, this time focusing on the content of time line of one specific social medium (Facebook). Specifically, we studied the timelines of 104 Facebook users to determine a) how many news items they were exposed to and b) what kind of news sources they received. We find, that on average social media feeds are remarkably news free. Only 3 to 4 out of 100 stories contain information about current events from news sources. This means, that social media still play a minor role in news dissemination in the Netherlands. If we consider the breadth in news sources, we observe a relatively large amount of diversity.

Figure 8

Top 20 news sources in social media feed

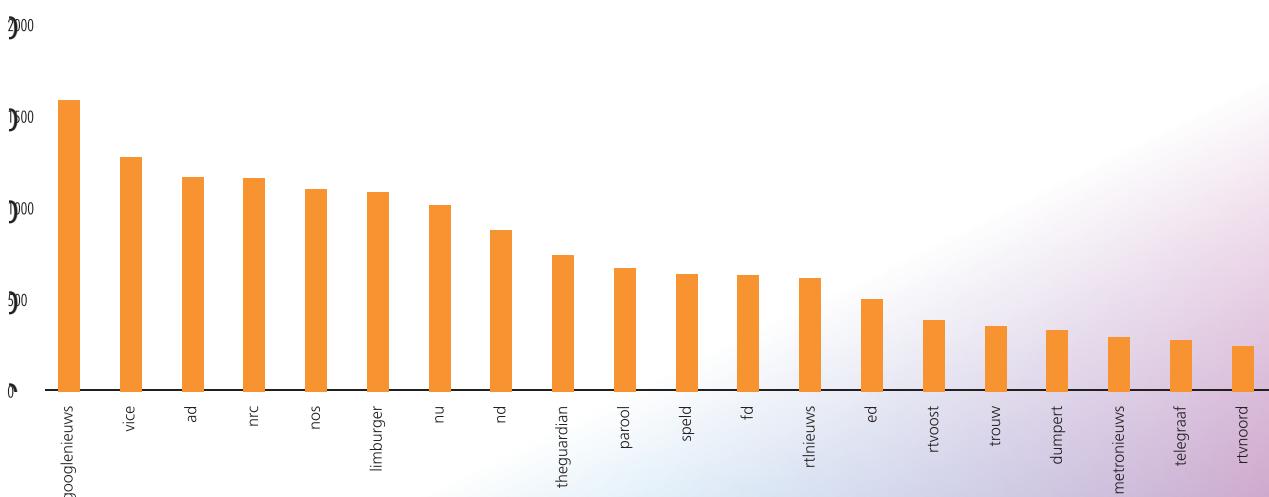


Figure 8 displays the 20 most common news sources in the news feed in our study. We see that there is large variety in the news sources: news portals like vice that create content aimed for social media dissemination are well represented, but also classic newspapers like the *limburger*. There is a mix between text based sources and audiovisual platforms like NOS or RTV Oost. In total we observed content from 129 different whitelisted news sources in the news feeds and on average users had at least 7 different news sources in their news feed.

To identify whether the diversity of news in social media feeds is systematically biased among the Dutch population we carried out additional regression analysis. Specifically, we used maximum likelihood estimation based on a Poisson distribution to predict a) the ratio of news content to other content in the news feed and b) the number of different news sources. It should be noted that the model fit is weak but significant, implying that we should only generalize from these results to the general population with great caution. However, we do observe interesting patterns in the sample. We found two marginally significant predictors of news density. Younger respondents as well as respondents with higher political interest were more likely to find news items in their news feed compared to others in the sample, supporting the evidence presented in the previous section. Remarkably, that did not go hand in hand with greater variety in news sources. On the contrary, those participants with higher political interest saw significantly less different news sources. However, this finding only holds if outliers are excluded, that means if we leave the most extreme cases out of the analysis, as is common practice in the social sciences. Interestingly, if they are included, we find the opposite. More political interest significantly means a more diverse set of sources. That means those who are extremely active (real news junkies) consult a multitude of sources.

Future developments

In sum, the analysis above suggests that while there is little evidence for polarization due to filter bubbles in the Netherlands, there is still a reason to be concerned about algorithmic filtering and news. Algorithmically filtered news means something different to different groups in society. To many of us algorithms supplement an already rich media diet with additional high quality and diverse information. In fact, we found elsewhere (Bodó et al., 2018) that expecting that algorithms will reduce diversity leads to less appreciation of news recommendation services, especially for those with high political sophistication. However, algorithmically filtered news are also becoming an integral element of news exposure for those who do not consult news elsewhere, and exactly those people are likely to be served less news as part of their feed, and if they get news it has potentially lower informational value.

This is especially concerning, since this is also the group of people that is *most vulnerable to attempts to be strategically persuaded* using tailored information. For example, research shows that media literacy mitigates persuasion

effects of ads (Kunkel et al., 1990, Rozendaal et al., 2011), this holds likely even more for ads that are tailored made to the vulnerabilities of specific groups. In the context of political campaigns this can have severe consequences for a democracy that is based on principles of a market place of ideas. Through a targeted campaign political parties can influence exactly those voters that have few opportunities to verify the information they receive online through other information sources and also lack skills to do so. Academic studies show that online ads can be effective to mobilize voters (Hager, 2019), and although there is no empirical evidence yet, theoretical research (Valkenburg & Peter, 2013) suggests that these effects are likely to increase if the information is tailored to the recipient, for example messages crafted for introvert or extrovert citizens (Matz et al., 2017), or messages target to a specific demographic profile such as women over 50.

In other words, our results clearly show that algorithmic filter systems on social media platforms and beyond have gained considerable *gatekeeping power*, especially for segments of the population characterized by lower political interest and confidence in their political skills. While there is at present no reason to assume that this power is abused, this does not mean that this cannot happen in the future. Hence, there is a clear need to monitor not only exposure diversity, but also exposure to news in general, and the quality of the information different segments of the population are receiving through algorithms. At present, this is a difficult task to fulfill, because there is no openly available research tool that allows to integrate all target information a person receives. Besides technical challenges, this is also a consequence of privacy and data restrictions imposed by the platforms and organizations that provide gatekeeping services.

It is important to note that by this we no longer only mean the major platforms. At present, all major news organizations are also working on integrating artificial intelligence in the distribution of their content, which can soon lead to similar challenges as we are currently facing in the context of platforms.

Beyond the Filter Bubble

After having presented empirical evidence, we will now discuss future risks of the digital transformation of the news ecology for exposure diversity. The filter bubble is a powerful imaginary, and one that has framed a large parts of the discussion about the impact of social media platforms, and algorithms on the quality and diversity of the public sphere. Not only academics, but also practitioners, users and policy makers are concerned about the filter bubble, and possible negative consequences for society, social coherence and the democratic process. This first part of the report has demonstrated that, at least for the Netherlands, the picture is more nuanced. Certain parts of the population are clearly at a higher risk of ending up in a filter bubble than others, namely those of higher age, lower levels of education and political interest. Importantly, our research also has shown that Dutch users still value diversity (Bodó, 2019), and that the majority of users gets their information from a variety of sources (Zuiderven Borgesius, Möller, & de Vreese, 2016). As long as this is still the case, filter bubbles, at least for the Netherlands, must not be the primary concern. Instead, the concern must be to continue creating the conditions that people can and will inform themselves from a diversity of sources.

Does that mean that there is no need to be concerned about the impact of AI and algorithms for users and society? That would be the wrong conclusion. In this second part of the report we argue that instead, it is high time to move beyond the filter bubble discourse and perform an analysis of what the real and more urgent issues are. While the specific filter bubble effect could not be confirmed for the Netherlands, it is a given that the arrival of filtering technologies, algorithms and AI are changing national media landscapes profoundly and on many levels.

Rediscovering the Audience

Digital technology is changing the way in which people source, and interact with, news, i.e. from personalized news to voice-driven AI assistants (Newman, 2018). The implications of this are manifold. One important implication is that the news media no longer retain a monopoly on telling citizens what they ought to consider worth reading.

The media instead find themselves competing with social media platforms, search engines as well as users themselves in setting the agenda. Previous discussion on the topic has devoted much attention to the new gatekeeper role of social media platforms and search engines. And rightly so (see below).

Users and Algorithmic Feedback Loops

Often overlooked is the fact that users are not merely passive victims of selection and filtering technology. Instead, users also influence algorithms directly (e.g. through searching for a particular article) or indirectly (through their data, their digital shadow). This is why *it is more important than ever for regulators to get a better understanding of the audience*. This also means a fundamental departure from the traditional mass-media logic of looking at the audience as an undefined mass of receivers (Helberger, 2015). It is important to better understand the audience for a number of reasons:

One is that as a result of data-driven discovery methods for media content, the personal characteristics and behavior of users will influence the information they get to see. The result can deviate (substantially) from what professional journalists and editors may think is worth reading. Regulators still lack the metrics and benchmarks to assess whether this is a change for the better or the worst. On the one hand, algorithms could be more responsive to personal interests, and better reflect the diversity and heterogeneity in the audience (as still “one of the most difficult problems for media regulation” (Gibbons, 1998)). On the other hand, algorithms could lead to a reduction of diversity, polarization, and new digital inequalities. Unclear is also how such forms of user-driven diversity relate to established notions of diversity and pluralism as one of the central public values in media and media regulation.

Second, online the characteristics and behavior of users is data – data that will be used to feed and train the machine learning algorithms that recommend people media content. This also means that the quality and diversity of the available data will influence the quality and diversity

of recommendations. Questions of data quality, whether data is complete, how well it succeeds in representing (individual) users interests but also a heterogenous society will ultimately influence the quality and diversity of recommendations. Currently, much attention in the public and media law and policy debate is focused on the algorithm itself, its opacity and public value. More attention is needed for the quality, diversity, lack of bias of data that feeds the algorithm, but also: the limits of a data-driven approach to truly and accurately reflect the interests and preferences of users.

Third, knowing the audience is important to be able to identify new potential vulnerabilities. Another, concern that has also been hinted at in the first part of this study is that of positive or negative information loops. This is the question of whether the use of personalized media broadens or narrows individual user's information diets and horizons. Algorithmic selection can lead to a situation in which users that already consume diverse news will be served even more diverse political information. To the contrary, those that already have a narrow view will be further limited in their choices. With the present focus on filter bubbles, much of the discussion has been concentrated on the effects of selective (and algorithmically mediated) exposure: whether it shelters people from alternative ways, reinforces biases and previous convictions, is not challenging enough or open to new perspectives (Stroud, 2008: 341-366; Iyengar & Hahn, 2009: 19-39; Lee, Lindsey, and Kim, 2017: 254-263; Quattrociocchi, Scala, & Sunstein, 2016; Beam, 2014: 1019-1041). A question that has received too little attention so far is the question of the factors that affect exposure to news, and whether there are certain parts of the population that, because of their personal characteristics, situation, etc. do not receive news, or only particularly selections of use. In so doing, algorithmic filtering can result in new digital inequalities (Thorson, 2019) and new categories of vulnerable viewers.

New categories - 'vulnerability to adverse effects of algorithmic selection'

A common distinction in vulnerability research is the distinction between internal personal and external characteristics. Watts and Bohle, for example, differentiate between individual and collective vulnerabilities (1993). Individual vulnerability can refer to conditions specific to one individual that prevent her from being able to respond to various threats (Watts & Bohle, 1993). For the case of media use, one could think of disabilities, lack of education, (digital) illiteracy, age, but also: disinterest in news, unawareness, political disinterest, lack of trust in the media, etc. Collective vulnerabilities refer to inabilities stemming from social market structures independent from the individual. The example that Watts and Bohle mention is social status. Other possible examples for the news case could be profession, affluence, value to advertisers, etc. These individual and collective characteristics ultimately decide who has access to what kind of news online, and who will be excluded. It is important to note that al-

gorithmic filter systems will detect these biases, reinforce and catalyze them. This in turn can create new *individual vulnerabilities* (e.g. a low educated or elderly social media-only user will only receive news the algorithm thinks she is interested in). It can also create societal vulnerabilities, in the sense that entire groups in society might be treated differently by the algorithm. The filter bubble imaginary is not able to adequately describe the inherent risk for individuals and society. Instead, we suggest here that more attention should be devoted to the '*vulnerability to adverse effects of algorithmic selection*'.

Path dependencies and algorithmic feedback loop can be problematic from an individual, societal or public policy perspective. This is true in situations in which algorithms re-enforce existing vulnerabilities (low educated get only recommended articles for low educated), stereotypes (women get more content about celebrities and health, men more about sports and tech) or create new digital inequalities (Kalogeropoulos, & Kleis Nielsen, 2018). Insofar, while the current discourse about AI and algorithms in the media has concentrated in the first place on immediate positive or negative effects (such as filterbubbles), more attention is needed for the process behind algorithmic filtering, and the medium-to long term effect that algorithmic filtering has: not only on news, but on society as a whole.

Diversification of Diversity Policies

Media law and policy today still does not tend to differentiate very much between different groups or categories of users (with a few exceptions, such as minors or disabled). As the data has demonstrated, there are potentially other segments of the audience that are equally or even more vulnerable in a digital environment. The aspect of individual/societal vulnerability, or the medium to long term effects of algorithmic selection in the media are not yet well understood. Under the influence of digital technologies not only audiences and media offers are differentiating. Policy makers need to differentiate diversity policies, too.

Turning to the Media

Another aspect that is closely related to the debate about the implications of algorithms and AI is platforms. As already mentioned, in the digital environment, media use is more than ever mediated by technology. Technology that is increasingly getting smarter. And one of the most avid and advanced users of that technology are certain search engines and social media platforms. Before we turn to the role of platforms, however, we would like to draw attention to another actor that is also increasingly experimenting with AI, data analytics and algorithms: the media. According to a Reuters report from 2018, ¾ of editors, media managers and innovation directors interviewed have indicated that they already use AI, first and foremost in the form of improved content recommendations, the automation of workflows. Digital technology serves as a tool for journalists to investigate, find and write stories but also

to improve their business model and commercial viability (Reuters Institute for the Study of Journalism, 2018). Attention for the use of AI and data analytics in the ‘traditional’ media is important for a number of reasons:

- New technologies can provide opportunities for new ways for the media to exercise their democratic/societal role, but also: to create new efficiencies and sources of income, and to compete in media markets, for example in relation to platforms;
- New technologies disrupt existing routines, processes and safeguards to protect the quality and diversity of media content;
- The way the media uses digital technologies can potentially have an equally important effect on society and the market place of ideas, particular where these media hold positions of trust and are considered serious sources of information.

Challenges and Opportunities for the Traditional Media

We already briefly touched upon the potential of digital technologies to be more responsive to the individual information needs and interests of a heterogeneous audience, not only in terms of the different kinds of contents, but also in terms of language, complexity, time to read, etc. The news media are only beginning to experiment with richer, more sophisticated ways of using recommendation algorithms and AI. Algorithmic recommendations can respond to an old criticism of liberal authors about patronizing the user and instead allow the media to be more responsive to signals from the user. Hindman even goes one step further, arguing it is an obligation for journalists to use audience analytics, for exactly this reason (Hindman, 2017: 177-193). Personalized recommendations can bring journalist one step closer to the goal of truly engaging with the audience and building deeper, more fruitful relationships.

In this context it is worth pointing out that the filter bubble metaphor has traditionally been used as a dystopian metaphor. To the contrary, filter bubbles, or rather: *specialized interest bubbles* can potentially be a very useful phenomenon as well, as long as they do not result in tunnel vision, polarization or the lack of a common public forum (insofar also here our data is encouraging). And the Netherlands with its very particular public broadcasting system is an example hereof. Using information filtering and recommendation systems can indeed also be a way to provide more in depth information and specialization; to strengthen debate, to adjust information to specific information needs and habits (e.g. different styles, levels of complexity, but also: to respond to the needs of disabled people), thereby putting the media in a position to better serve a heterogeneity of people. Much will depend to which end the filters and recommendation systems are used, the metrics that they are optimized for, but also: the degree of editorial control and oversight (see below).

Clearly, there are some challenges here as well. One we already mentioned, namely the question of whether the

data that inform algorithmic processes actually mirrors the short term as well as long term preferences and needs of the user. Or are they are outweighed by other signals and optimization benchmarks (such as the preferences of advertisers, the editorial team, values on the side of technology developers) (Ferrer-Conill & Tandoc, 2018a; Belair-Gagnon & Holton, 2018: 492-508)? Partly this is also a question to what extent users have agency of the algorithmic process (Harambam et al., 2018). Another question is if the ‘real’ audience actually knows what it needs or wants (Tandoc & Thomas, 2014). Even if an algorithmic recommendation was successful in accurately predicting the information needs of users, there is still the question of whether that should overrule what users (at that moment) believe they want, what editors think news readers should know, and, related to that, what other voices should be shown (diversity). Nguyen and colleagues (2014), for example, warns of the danger that newsrooms will perceive metrics as a goal in itself, and not a means to an end.

Duties and Responsibilities

The second (digitization disrupts established routines) and third point (structural implications for the market place of ideas) are closely connected: because the media’s special role in the market place of ideas, it is particular important that AI and data analytics in newsrooms are used in a way to further the democratic role of the media, inform, provide a public forum and play the so critical watchdog function. Also, exactly because of the role that the press and broadcasting media play for democracy, freedom of expression and other fundamental rights, such as personal self-development and the freedom to hold opinions, the media also face special duties and responsibilities, towards users and towards society as a whole. The question of whether those duties and responsibilities should extend to the use of new technologies, and if so, how exactly, is an important and still not sufficiently debated question. For example, while the past years have seen a lot of discussion about a potential editorial responsibility of platforms (e.g. to filter harmful content and misinformation, but also: provide diverse recommendations), we have seen comparatively few debates on the level of, and quality of the editorial control over algorithms in the traditional media. Unlike social media platforms, the traditional media, and public service media in particular, are committed by law or self-regulation to uphold certain professional standards of fairness, objectivity, diversity, etc. But how do these public values translate in algorithmic design?

Disruption in the newsroom

It’s still early days and many media companies are only at the initial stages of experimentation (Kleis Nielsen & Selva, 2019). Many digital developments are driven by the news media’s research & development and marketing departments (Bodó, 2019). What is often found lacking is an editorial vision on how AI and data could contribute to the a particular news outlet’s goal, or which journalistic values and principles should drive that technology. Its developers

will often have their own conceptions of key values such as diversity or objectivity (Ananny & Crawford, 2015, 192-208). Also, the dependency on (external) technology producers and data scientists can throw up new challenges to journalistic key values, such as editorial independence and control being threatened (van Drunen et al., 2018). Being able to deal with the power that AI and data analytics offer over the production and distribution of media content in a responsible manner also requires new skills and technological expertise that many journalists and editors may yet have to master. Few newsrooms have the necessary procedures and routines in place to evaluate the performance of algorithms, or to mitigate any (undesired) side-effects to individuals and the public sphere that might surface.

Changing Relationship with the Audience

The introduction of data analytics into newsrooms changes the relationship between the media and their audience. On the one hand, users' data, preferences and metrics more and more inform the work and choices of journalists. Will the media still be able to independently observe and report what is worth reporting when it is no longer the editor who decides what is newsworthy but audience metrics (Anderson, 2011: 550-566)? Ferrer-Conill and Tandoc are among those who warn that "[a]vailable metrics then become proxies to ... journalistic ideals, especially for overworked journalists" (2018b). Insofar, one challenge for the media is to strike a new balance between being (hyper)responsive to the interests and information needs of the audience, and their own judgement what is worth knowing.

On the other hand, the news media also increasingly and systematically reduce the distance to the audience by collecting more and more information about users. This process alone is accompanied by controversies, such as the question to what extent it is legitimate or not to make access to news content depended on the acceptance of tracking cookies. More generally, there are concerns about the "intellectual privacy" of users (Richards, 2008; Cohen, 1996), but also more generally the implications for the audience's right to receive information (Eskens, Helberger, & Moeller, 2017), autonomy and informational self-determination. Beyond these important concerns about respect for public values and fundamental rights, such as privacy and autonomy, knowledge is also power. New power brings new responsibilities. As one of our interviewees (in the context of another study) said: "After I've seen you watching three hours of television, should we stop showing you recommendations so people shut it off and go outside? Is that one of our responsibilities? Or are we there just to keep you glued to the screen? Is that what we are optimizing for?" (Bodó, 2019). Indeed, the question of what to optimize for ties back into the earlier observed need for the development of proper editorial visions on the use of AI and data analytics tools in newsrooms.

The quote illustrates well the dilemma that some media organisations are facing. How far should the media go in monitoring the behavior of users? What ethical and legal

limits to take into account? How to organize editorial responsibility for the algorithm? Privacy becomes not only a right and value of the audience. Privacy can also be seen as a safeguard for editorial independence and integrity of the journalistic judgement: not knowing certain facts about their audience also means not having to optimize for them.

To the extent that more and more processes in newsrooms are being automated, and that the ways this is done falls outside established journalistic routines and checks and balances, clearly defining the conditions, and scope of editorial control over algorithmic processes is important, both from the perspective of users, and society at large. Second, the question of how to give users more agency and meaningful control is a pertinent one, not only from the perspective of professional journalistic ethics, but also as a matter of respect for users' dignity, their right to informational self-determination and freedom to receive information.

A Second Look at Platforms

Finally, there is the role of platforms. The implications of the growing importance of platforms has received much attention from academics, regulators and informed citizens alike, and a number of scandals and recent investigation has only heightened this attention. At the same time, over the past two years the stance of regulators in Europe has changed from a careful monitoring approach, towards a more pro-active regulatory approach. The German NetzDG, the recently adopted Audiovisual Media Service Directive, the fines for Google, but also the recommendations from the High Level Expert Group on Fake News and Online Disinformation (HLEG) are only some examples thereof. Insofar, it can be argued that there is currently both: the momentum as well as the political will to take further action with regard to platforms, and their impact on public values such as pluralism and a functioning public sphere.

Taking such action is rendered more difficult by the volatile nature, not only of the technology but also of platforms. Facebook's frequent changes to the newsfeed algorithm and the implications for the news industry exemplify both the influence of platforms as well as the lack of control of policy makers in Europe. Insofar, the platform debate is also very much a debate about a moving target. It is worth mentioning that the platforms that we are concerned with today, are not necessarily the platforms of tomorrow. Media regulators need to stay up to date with technological and economic innovation in digital media markets.

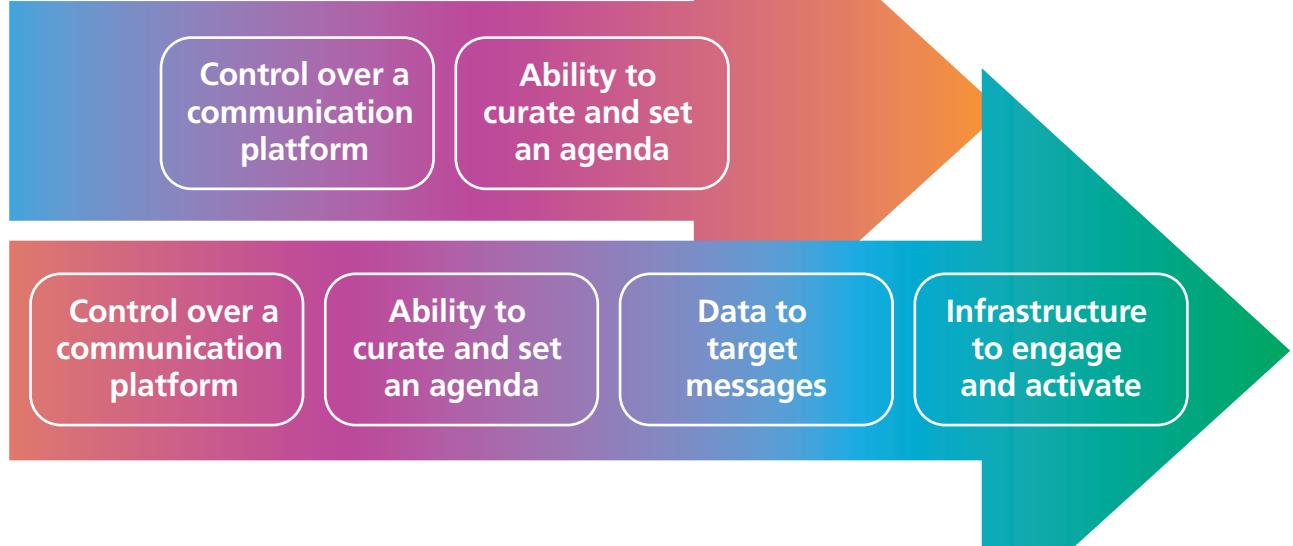
This report is not the place to repeat the (controversial) arguments and suggestions that have been made with regard to the governance of platforms in general, and diversity enhancing measures in concrete (for a comprehensive overview see (Foster, 2012; Helberger, Kleinen-von Königslöw, & Noll, 2015)), nor is this a debate that has resulted in commonly shared conclusions. Indeed, now, more than ever, is the time to discuss concrete legal actions. Having said so, making concrete suggestions is beyond the man-

date of this report. Still, we would like to take the opportunity to highlight a number of concerns that are, in our opinion, the true source of concerns about the impact of filtering technology. In this context, some general remarks about today's and possible future media law and policy will pass revue.

In so doing we would like to start out with the observation that media diversity policies are in their very essence about the dispersal of media power. As the famous media scholar Edwin Baker once said: "Dispersal of media power, like dispersal of voting power, is simply an egalitarian attribute of a system claiming to be democratic" (Baker, 2007). Or as another prominent media scholar, Toby Mendel, formulated once: "The considerable influence of the media over political opinion can, where it is unduly controlled

by one or a small number of players who are prepared to use that influence for political purposes, skew political power." One consequence of the prominence of the filter bubble imaginary over the past years is that the discourse has centered very much on the effects of platforms, and filtering technologies on platforms on users. As we have shown, for the Netherlands these concerns are only to a limited degree confirmed, at least for the time being. And yet, behind the concerns about selective exposure is a larger concern. This is the extent to which platforms, through their selections and recommendation algorithms, are able to influence public debate, and ultimately the democratic process. In other words, the extent to which platforms hold and exercise media power. Departing from this observation, we would like to offer three observations:

The nature of the political power of platforms



Platforms as Holders of Opinion Power

There is probably little doubt that at least some of the more influential platforms hold media power. Equipped with powerful algorithms, platforms can set out sophisticated data driven strategies to match contents with users. Unlike the traditional media, platforms also have the tools to arrest the attention of each single member of the public. Or in the words of democratic theory scholar Lincoln Dahlberg, (at least some) platforms are the masters in the art of the "corporate colonization of online attention." And there is little or no regulation in place to restrict them.

Platforms share this power, at least to some extent, with their users. Unlike traditional media, platforms (not yet, or not yet

to a significant extent) create media content themselves, nor do they determine the algorithmic selection alone. For a significant part platforms rely on the content and the signals from their users to inform algorithmic ordering. More optimistic observers, like Bill Dutton from the Oxford Internet Institute have gone so far as to liken platforms to the Fifth Estate: A "new form of social accountability is emerging" he said in his inaugural lecture, "what I am calling the 'Fifth Estate' ... we will argue that this could be as important – if not more so – to the 21st century as the Fourth Estate has been since the 18th". One major difference between the fourth (the media, and here the broadcasting media in particular) and fifth estate is that the one is subject to strict regulations exactly in order to reign in the considerable political power

of the media, whereas this new fifth estate is still subject to only very limited regulatory interventions.

While it would go far beyond the scope of this report to go deeper into the question of the differences in regulatory approach towards the traditional media vs platforms as information society services (see insofar e.g. (Tambini & Sharif, 2015; Schulz, Held & Laudien, 2005), two observations are in place. One is that exactly because this dispersed (or cooperative) character of media power, and the role that users play in this process, forcing platforms into the position of an editor of users' contribution fails to understand the way algorithmic curation, but also diversity on social media platforms work. The result may be to actually re-affirm the power of platforms to censor speech, similar to an editor, without the editorial knowledge nor the safeguards and checks and balances that are in place in traditional news rooms. Before this background the concept of 'organizational responsibility' as suggested in the new AVMSD is closer to acknowledging that, ultimately, cases of problematic content on platforms can only be addressed as a matter of 'cooperative responsibility' (Hellerberger, Poell, & Pierson, 2018). Cooperative responsibility refers to a division of tasks between the actors that cause the spread of such content: platforms, but also advertisers, media and ultimately users. How to give this form will also be an important question in the context of the implementation of Art. 28b and the provision about 'adequate measures' into Dutch law.

Platforms and external diversity

Another consequence of the fixation on filterbubbles in the current debate is that the role of platforms in the wider national media ecology, or: their impact on *external diversity* has been neglected. As we have argued elsewhere, one of the reasons why we do not have to worry about filter bubbles in the Netherlands yet, is the fact that the majority of Dutch media users still multi-source. In other words: Dutch users still have access to a diversity of alternative sources of information, and many users still make use of these sources. Necessary precondition for the ability of citizens to inform themselves from a diversity of sources is, of course, that there is and will remain a diversity of (affordable) media sources available. To questions arise then:

One is: how will the way users use platforms to find and consume media content affect the overall diversity of media markets. What exactly is the share of platforms in (the power to) informing users? How equally or unequally is 'opinion power' distributed? This triggers a follow-up question, namely: how to measure this? For example in the UK Ofcom has made a step into that direction, but also highlighted the difficulty of developing the metrics and measures that are necessary to do so (OFCOM, 2012).

The second question is of a regulatory nature: how to remedy

unequal distributions of media power as the result of the still growing importance of platforms? Doing so is rendered more difficult by the fact that platforms still fall under e-commerce law, with the effect that they a) do not face the same level of regulatory obligations and restraints on media power as traditional media (creating an unequal level playing field) and b) that platforms do not fall under the traditional media concentration rules.⁶ One important task of national media concentration rule is (or was) exactly that: to balance media power across the market place of ideas, and prevent that one actor gets a disproportionately large share of media power, as compared to the other players. Note, media concentration rules are related to, but are distinct from the application of general competition law. And yet it is important to realize that achieving cross-market place diversity, and dispersing media power is exactly the goal and purpose of media concentration rules. The question is: can and should media concentration rules be extended to platforms, respectively be re-introduced in those countries that have abolished them?

The political power of platforms

Another characterizing feature of much of the current debate about platform regulation and governance is that platforms are still addressed, first and foremost, in their function as host and facilitators of speech. This approach is still a legacy from the original e-commerce approach, that qualifies platforms as hosts and facilitators, rather than active political actors. The new AVMSD, the NetzDG, the recommendations of the HLEG and similar initiatives but also the concerns about filter bubbles all point into that direction: controlling, and instructing platforms as the facilitators (and censors) of the speech of others (about the potential undesirable side-effects of this approach see above).

The facilitator role is certainly part of what platforms do. Next to that, however, is the political power of platforms, and their role as political actors in their own right. Insofar, a distinction can be made between platforms as the providers of services to political parties, and platforms as active political actors in their own right.

Platforms as providers of services to political parties

Dutch scholar Dobber observes: "[M]uch more than the advent of the internet itself, it is the advent of social media such as Facebook (2004), YouTube (2005) and Twitter (2006) which provided political campaigns with new ways of communication with the electorate" (Dobber et al., 2017). And Kreiss and McGregor have documented how technology companies such as Facebook offer embedded teams to closely work with campaigns in the US (2018). We see similar developments in Europe as well. During a Dutch election campaign, for example, Facebook actively approached political parties and offered them advice on how to best use Facebook for their specific purposes. Because platforms are places where people communicate, exchan-

6 To the extent that national media legislation is in effect. In the Netherlands, sector-specific media law has been abolished. Further information on the trend to liberalise media concentration rules in Europe can be found at: <https://www.mediamonitor.nl/wp-content/uploads/2013/08/Mediamonitor-The-Dutch-media-in-20101.pdf>, p.22ff.

ge and share, platforms also hold an incredible amount of information about users, which they can offer in turn to political advertising campaigns. Dobber found as a result of an interview study in the run up to the last Dutch national elections, that all campaigns use the political micro-targeting infrastructure Facebook offers, although some more than others (*ibid*). And if one is to believe Mark Zuckerberg: "In recent campaigns around the world -- from India and Indonesia across Europe to the United States -- we've seen the candidate with the largest and most engaged following on Facebook usually wins. Just as TV became the primary medium for civic communication in the 1960s, social media is becoming this in the 21st century." (Mark Zuckerberg, Letter on Facebook's Global Ambitions, 2017). Martin Moore was one of the first to flag not only the economic, but also and exactly the political power of platforms: "The use of their power to command attention to promote their own views and services takes large information intermediaries beyond neutral platforms, and can give them a political power comparable to that of a broadcaster. The difference being that, in many democracies, broadcasters are constrained in what they can broadcast and in the political views they themselves can express" (Moore, 2016).

Platforms as political actors in their own right

Selling eyeballs to political parties is one thing, using this powerful privately controlled public sphere for own goals and ambitions is another. It is important to realize that platforms – or the people behind platforms – are not without their own political ambitions. One example is Uber that, discontent with the plans of the mayor of New York to regulate its services, mounted a powerful social media campaign, replete with a feature on its app warning of an Uber-less New York City future, offering free rides to protests, asking users to email the mayor, and celebrity pleas from the likes of Neil Patrick Harris and Kate Upton. Another example is Google, who blacked out its logo in January 2012 in protest against the Stop Online Piracy Act (SOPA) and Protect IP act (PIPA), urging users to sign a petition against the bills. Common to all these examples is an old, but also still very valid truth: speech and communication are the essence of democracy and any good government at the same time. And whoever controls and organizes speech, also has considerable political power.

Insofar, the last and final point we want to make is about the need of moving away from the picture of platforms as sole facilitators of the speech of others. It is time to realize that platforms are not only the holder of considerable media power. They also wield significant political power of their own – particularly where they connect large amounts of voters. And while it was not the task of this report to develop regulatory options and concrete solutions, we would like to conclude with the observation that the political power of the media is not a new problem. The traditional media, and broadcasting media in particular have had a long tradition of being subjected to strict regulation with the goal to curb their political influence and direct it

into the right directions. More specifically, these are

- The rules on political advertising and role media in political campaigns
- Rules on media concentration, supplemented with competition law reviews, and
- Rules with the objective of creating (political) counterbalance and disperse political power of not only voices and opinion in society, but also the media transmitting them.

The question for media law and policy now is: should these rules be liberalized for the traditional media, or extended to platforms, and if so, how.

Concluding remarks

In this report, we argue that while the current discourse about AI and algorithms in the media has concentrated in the first place on immediate positive or negative effects (such as filter bubbles), more attention is needed for the process behind algorithmic filtering, and the medium-to long term effect that algorithmic filtering has: not only on news, but on society as a whole. The concept of the filter bubble imaginary is too general to describe the inherent risk for individuals and society. Instead, we suggest to devote more, and more intensive attention to the user groups that are most likely affected by algorithmic filtering (e.g. a low educated or elderly social media-only user will only receive news the algorithm thinks she is interested in). Next to individual vulnerabilities for the adverse effects of algorithmic filtering, we call for more attention for the creation of societal vulnerabilities, in the sense that entire groups in society might be treated differently by the algorithm.

We also draw attention to the fact that not only platforms but also the traditional media are increasingly engaging with algorithmic tools, and point to the importance of supporting them in their task to develop smarter, more diverse metrics. The use of data-driven tools and AI, however, also requires the media to rethink their relationship with the audience and develop new 'algorithmic journalistic ethics' that can guide the responsible use of data and algorithms vis-à-vis users and society.

Finally, we point to the much more profound and structural developments behind our concerns about filter bubbles and other effects of algorithmic filtering, namely the impact of platforms on the health and diversity of the overall media landscape, but also the raising political power of platforms. Filter bubbles, to the extent that they exist, are a symptom of an unhealthy media ecosystem. Making our media system resilient, organizing a better division of 'media power' and creating and maintaining the conditions for a functioning, diverse media landscape are the cure.

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