Access diversity through online news media and public service algorithms:

An analysis of news recommendation in light of Article 10 ECHR

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Abstract. Internet users have access to news through a variety of distribution channels, and, since the introduction of recommender systems, increasingly in a personalized manner. Online news recommendation technologies are said to have the potential to either decrease or increase diversity in news consumption. The design of recommender systems could accordingly, and regardless of explicit user choices (*content as sought*), impact the diversity of *content as recommended* ('access diversity'), and thereby the diversity of *content as consumed* ('exposure diversity'). This chapter argues that Article 10 of the European Convention on Human Rights requires States to guarantee that citizens can receive a diversity of viewpoints concerning matters of public interest via digital (news) channels. In that context, it proposes a requirement for online news media to not engage in implicit homepage personalisation (by default) on the one hand, and the use of so-called 'diversity-enhancing' public service algorithms, both by public broadcaster online news brands and a newly established news aggregator, on the other.

1. Introduction

Internet users increasingly access news in a personalized manner using a variety of news distribution channels. As such, news items are being recommended to them that match their interests as well as other personal data, such as demographic and location data (Kaye 2018, 6–7; Vandendriessche and De Marez 2020, 70–76; Möller, Helberger, and Makhortykh 2019, 11–12; Vermeulen 2020, 190–93; Verdegem and Lievens 2016). It is often feared that people, as a result, might only be consuming information and ideas that confirm their own views, a phenomenon frequently described as the 'filter bubble' (Pariser 2011). At the same time, it has been argued that online news recommendation technologies also have the potential to increase – rather than decrease – diversity in news consumption (Helberger, Karppinen, and D'Acunto 2018, 192). In this context, a (legal) question arises: do citizens have a fundamental right to receive diverse information (via the Internet), stemming from Article 10 of the European Convention on Human Rights ('ECHR'), and, if so, does that impact the use of recommender systems for the distribution of news online?

To answer this question, this contribution's next section (2) sets out how people currently access news via the Internet. The following section (3) establishes to what extent diversity in news recommendations ('access diversity') is determined by, on the one hand, the design of algorithms, and, on the other, the explicit choices of news consumers. In doing so, it distinguishes between *content as*

sought, *content as recommended* and *content as consumed* (*before* and *after recommendation*) and puts forward a version of Napoli's 'diversity chain' (Napoli 1999; Napoli 2011) adapted for the digital era. Thereinafter, a new section (4) explores whether the right to freedom of expression and information as laid down in Article 10 ECHR, as interpreted by the European Court of Human Rights, indeed includes a right to receive *diverse* information (via digital channels). The second to last section (5) examines how the jurisprudential insights thus obtained can inform future media policies. The final section (6) summarizes the main ideas put forward in this chapter.

2. Access to news in the digital environment

Internet users access news online using a variety of distribution channels (Möller, Helberger, and Makhortykh 2019, 11–12). In the first place, there are the websites and apps of news media, that is to say (private sector) legacy newspaper brands, (private sector) 'digital-born' or 'online-only' publications, as well as (private or public sector) broadcaster online news brands. They are the key producers (sources) of online news (content), and play an important role in the distribution thereof (Nielsen, Cornia, and Kalogeropoulos 2016, 19–20).

Secondly, Internet users find hyperlinks to news articles elsewhere online, and in particular through social networks, news aggregators or search engines (Vandendriessche and De Marez 2020, 70–76). While these actors distribute news content (Nielsen, Cornia, and Kalogeropoulos 2016, 19–20), they do not engage in its production (ARTICLE 19 2013, 6). Hence, when users click a particular article to read, they will (usually) be redirected to the news medium that originally published it.

Online news distribution channels are increasingly becoming personalized through recommender systems ('recommendation' or 'personalization'), which determine which news items are displayed to whom and in which order (Kaye 2018, 6–7; Thurman and Schifferes 2012, 376 and 378; Vermeulen 2020, 192–93 and 197–98). Recommendation is particularly common on social networks such as Facebook and Twitter ('Data Policy (Facebook)' n.d.; 'Our Use of Cookies and Similar Technologies (Twitter)' n.d.), and news aggregator websites and apps, like those of Google News and News360 ('Google News', n.d.; 'News360' n.d., 360). The services of the latter generally consist of "providing [news consumers] with tailored content from multiple online sources through a single interface" (European Data Protection Board (EDPB) 2019, 14; Bernstein et al. 2020, 5). In their privacy and/or cookie policies, both online news media and search engines indicate that they engage in personalization unless users opt-out ('The Guardian's Global Edition' n.d.; 'Privacy Policy (Mediahuis)' n.d.; 'Cookiebeleid (Mediahuis)' n.d.; 'Privacy Policy (Google)' n.d.; 'Data and Personalization (Google)' n.d.; 'Privacy (Microsoft)' n.d.; 'Privacy Settings (Yahoo!)' n.d.). However, research shows that news

media homepages and search results are not heavily personalized in practice (Schwartz 2018; Möller, Helberger, and Makhortykh 2019, 11).

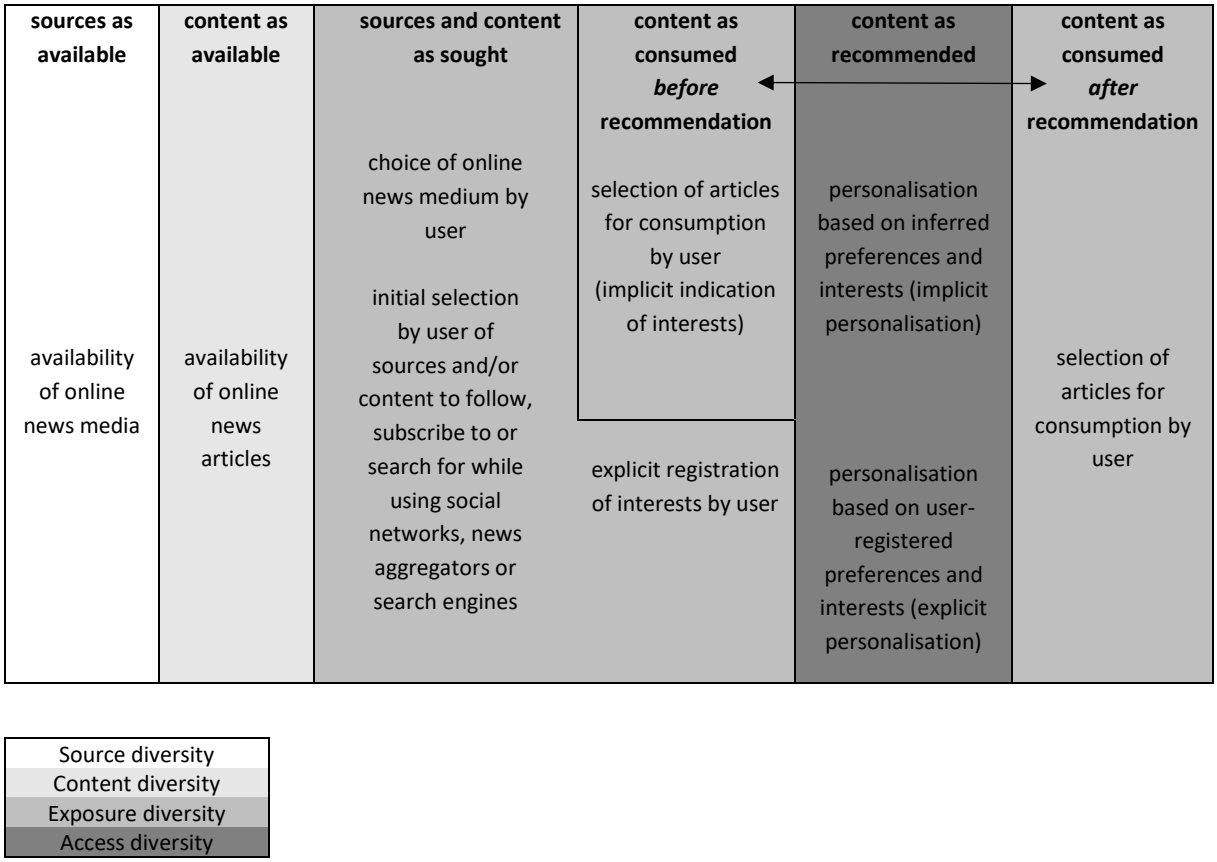
3. The digital diversity chain: introducing 'access diversity'

From source, through content, to exposure

'Media pluralism' is an essential element of democracy (European Commission and TNS Opinion & Social 2016), and has long been recognized as an important public policy goal (*Charter of Fundamental Rights of the European Union* 2000, art 11(2); European Commission 2020a). Although this term remains difficult to define, it is often conceptualized by reference to Napoli's (2011, 248) 'diversity chain', where, albeit theoretically, 'source diversity' through 'content diversity' influences 'exposure diversity' (Napoli 1999; Valcke 2004, 118; Joris et al. 2020, 2–3). 'Source diversity' is concerned with the 'diversity of suppliers', that is to say the owners of programs or outlets, or the workforces of outlets (Napoli 1999, 14–18; Valcke 2004, 188–91 and 200). 'Content diversity', on the other hand, refers to the diversity of produced content, in terms of its function, genre, targeted audience group, or *viewpoint* (Napoli 1999, 14–24; Valcke 2004, 191–97 and 200). The idea is that diversity in *sources as available* leads to diversity in *content as available*, leading in turn to diversity in *content as consumed*, or 'exposure diversity' (Napoli 1999). Generally, the latter has been discussed in relation to "the content that the audience actually *selects*" (emphasis added) (McQuail 1992, 157). Precisely for that reason, it constitutes the most important dimension of 'media pluralism' (Napoli 1999; Valcke 2004, 196; Helberger 2011, 443). However, since it is widely accepted that policies aimed at directly influencing individuals' reading behavior may infringe on their fundamental right to receive information and ideas (Valcke 2004, 200), as one may not be forced to consume content, 'exposure diversity', as opposed to 'source diversity' and 'content diversity', has received little policy emphasis in the past (Napoli 2011, 250).

From source, through content, exposure and access, to exposure

Table 1. The diversity chain in the digital environment (online written news)



Importantly, it seems no longer necessary for media policies to strongly focus on source and content diversity (Helberger 2011, 441; Napoli 2011). Indeed, as numerous online news media (sources) are available, online news (content) flows in abundance (Newman et al. 2020). In that sense, recommender systems are sometimes said to help audiences navigate a potential information overload (Gauch et al. 2007, 54). Be that as it may, these technologies are increasingly curating access to news (Bernstein et al. 2020, 2). By consequence users may, when using one of the aforementioned distribution channels, only be able to *select* articles for consumption from a list of items which have already been *pre-selected* by an algorithm (Zuiderveen Borgesius et al. 2016, 3). In this way, the diversity of *content as recommended*, rather than the diversity of *content as available*, becomes a proxy for the diversity of *content as consumed (after recommendation)*. Bearing this in mind, this chapter proposes to add 'access diversity' as a new dimension to the 'diversity chain'.

Logically, 'access diversity' largely depends on the design, that is to say the parameters that inform the algorithmic content selection process, of recommender systems (Helberger 2011; Helberger, Karppinen, and D'Acunto 2018; European Commission 2020b, art 29). Rather than using diversity metrics, most *state-of-the-art* news algorithms predominantly generate recommendations that match *inferred* user interests (implicit personalisation) (Thurman and Schifferes 2012, 367–77; Helberger,

Karppinen, and D'Acunto 2018, 196–99). These are predicted mainly on the basis of patterns of user behavior (clicks, likes, shares, comments, time spent browsing an item, etc.), and in particular previous consumption by users (*content as consumed before recommendation*), within the distribution channel in question (Verdegem and Lievens 2016; Vermeulen 2020, 190–93). While users, in this way, implicitly influence recommendations through their actions, they (often) do so unconsciously, without intending to indicate what news they wish to access in the future. In addition, recommender systems may also make inferences from other personal data, such as demographic and location data (Verdegem and Lievens 2016; Vermeulen 2020, 190–93), or even user-registered interests *(infra*).

At the same time, explicit user choices also impact 'access diversity'. Specifically, users choose which online news media they go to and which news sources and/or content they follow, subscribe to or search for while using social networks, news aggregators or search engines. As such, they *select* the initial batch of articles from which recommender systems (pre-)select a number for recommendation. Social networks allow users to 'follow' other 'accounts', including those of online news media (sources). News aggregators permit people to 'follow' the news media of their preference (sources) as well as to subscribe to certain topics or news events (content), thus pulling together news items regardless of source ('Feedly' n.d.; 'News360' n.d.; 'Flipboard' n.d.). It goes without saying that search engine results are also strongly determined by user choices, and in particular the search terms – which can relate to virtually anything (sources as well as content) – entered into the search bar.

In addition, news algorithms may be designed to generate recommendations that match *user-registered* interests (explicit personalisation), instead of or in addition to *inferred* ones (Thurman and Schifferes 2012, 376–77; Vermeulen 2020, 192–93 and 197–98). On Facebook, one can, accordingly, "[a]dd people and Pages to prioritize their posts in [their] News Feed" (sources) ('Facebook' n.d.). Similarly, Twitter enables users to 'follow' 'suggested topics' (content) about which they will see "top Tweets right in [their] Home timeline" as well as to deselect 'interests matched to [them] based on [their] profile, activity and the Topics [they] follow' (content) ('Twitter' n.d.). News aggregators may allow users to adjust their settings in a similar fashion, specifically in respect of the news *content* published by the news sources they follow. Some online news media allow news consumers to select their favorite topics, events or columns (sources and content), enabling them to access relevant content via a 'My Page' or 'My News Feed'-function, which can be described as a personalized page separated from the homepage (De Standaard 2019). Search engines, on the other hand, do not seem to provide any similar functionalities.

The explicit choices of users around the online news media they consult, the news sources and/or content they follow, subscribe to or search for while using social networks, news aggregators or search

engines as well as the registration of their interests (explicit personalisation), can also be viewed as indicators for 'exposure diversity'. More specifically, people are, when making those choices, already *selecting sources and/or content* for *future* consumption. Accordingly, it seems appropriate to refer to this user selection in the phase before recommendation as *sources and/or content as sought* rather than *content as consumed*. The latter term, accordingly, will be reserved for the *news articles* effectively *selected* ('clicked') by users for consumption, whether *before* or *after recommendation*. Lastly, it may be noted that as recommendation constitutes a continuous process, recommender systems over time also *infer* user interests based on which recommended items are read (see arrow in table 1).

Discussions regarding the online news diet of internet users often refer to so-called 'echo chambers' and 'filter bubbles'. The 'echo chamber' metaphor puts forward that users, once given enough choice, tend to lock themselves in (online) spaces containing only like-minded sources and content (Zuiderveen Borgesius et al. 2016, 3; Möller et al. 2018, 960; Stark et al. 2020, 14–15). A 'filter bubble', on the other hand, occurs when this effect materializes due to (implicit) algorithmic content selection (*infra*) (Pariser 2011; Zuiderveen Borgesius et al. 2016, 3).

If *content as recommended* lacks diversity as a result of explicit user choices (*content as sought*), the informational environment created resembles an 'echo chamber'. Conversely, when this effect stems from implicit personalisation, it corresponds to a 'filter bubble'. In the latter case, users may be prevented from consuming diversely in spite of their own diverse choices. Even though the existence of 'filter bubbles' is sometimes contested (Möller, Helberger, and Makhortykh 2019; Bruns 2019), 'interest-matching' algorithms will generally not increase the diversity in recommendations, but rather reduce it, whether significantly or not. Arguably, the 'echo chamber' and the 'filter bubble' effect would, in the event they exist simultaneously, amplify each other.

At the same time, it has been argued that news algorithms could also be designed to "broaden taste rather than create filter bubbles" and enhance diversity in *content as consumed after recommendation* ('Beheersovereenkomst VRT (2021-2025)' 2020; 'NewsDNA' n.d.). Inferred and/or registered interests would then be relied upon "to complement [users'] personal [news] diet[s], or expose [them] to opposing viewpoints", not to provide users with access to 'more of the same' (Helberger, Karppinen, and D'Acunto 2018, 192). In view of the fact that their use could help achieve the public policy goal of media pluralism, and in particular the effective exposure by users to diverse content, these technologies may be referred to as *public service* recommender systems (Verdegem and Lievens 2016). Importantly, they may ensure *diversity in content as recommended* in spite of a lack of diversity in *content as sought* and/or *content as consumed before recommendation*.

4. A right to receive a diversity of viewpoints concerning matters of public interest via digital (news) channels

In order to assess what these findings mean for policy makers, the question arises whether citizens in fact have a fundamental right to receive *diverse* information (via the Internet), stemming from Article 10 ECHR.

In particular, this provision states that:

> "1. *Everyone has the* right to freedom of expression. This right shall include *freedom* to hold opinions and *to receive and impart information and ideas* without interference by public authority and regardless of frontiers [...].
>
> 2. *The exercise of these freedoms*, since it *carries with it duties and responsibilities* […]".

The 'freedom to receive information and ideas' has been interpreted by the European Court of Human Rights ('ECtHR') on numerous occasions. Of importance in this context, is, first of all, its judgment in *The Sunday Times v. the UK*, in which the applicants complained about an injunction restraining them from publishing an article (para. 38). In this case, decided in 1979, the Court made clear that the press has a duty to provide the public with (access to) information and ideas concerning matters of public interest (Mendel, n.d., 13), while the public has a right to receive such content (para. 65) and to be properly informed (para. 66).

During the 1990s, considerations relating to media pluralism (*supra*) made their way into the case-law of the ECtHR. Firstly, in 1993, the Court ruled in the case of *Informationsverein Lentia and Others v. Austria*, concerning the impossibility of obtaining an operating license and setting up a radio or television station, as under Austrian legislation this right was restricted to the (public) Austrian Broadcasting Corporation (paras 23 and 26). Emphasizing "the fundamental role of freedom of expression in a democratic society", this judgment put forward that the undertaking to provide the public, through the press, with information and ideas of public interest cannot be successfully accomplished unless it is grounded in the *principle of pluralism,* of which the *State* is the *ultimate guarantor* (para. 38). That observation was considered especially (yet not exclusively) valid in relation to audio-visual media as their programs are often broadcast very widely (para. 38). In the 1999 case of *Erdoğdu and İnce v. Turkey*, which concerned the criminal convictions of the applicants for their involvement in the publication of an interview allegedly containing separatist or pro-Kurdish propaganda, the Court furthermore explicitly referred to "*the public's right to be informed of a different perspective* on the situation in south-east Turkey" (emphasis added) and considered that the domestic authorities failed to sufficiently respect their negative obligation in that regard (para. 52).

In *Manole and Others v. Moldova*, delivered in 2009, it was further clarified that the State, "as the ultimate guarantor of pluralism", has a positive obligation to "ensure, through its law and practice, that the public has access through television and radio to a range of opinion and comment, reflecting inter alia the diversity of political outlook within the country" (para. 107). This requirement corresponds to the idea of content diversity. Traditionally, there are two paths along which diversity in *content* can be achieved: it can be ensured either *within a single* medium (internal pluralism), or *across multiple* media (external pluralism) (Valcke 2004, 124). Importantly, in *Manole*, the Court held that a *public* broadcasting system must guarantee an internally pluralistic service (para. 107). However, as the domestic law did not provide any guarantee of political balance in the composition of the Moldovan public broadcaster's senior management and supervisory body, nor any safeguard against interference from the ruling political party in these bodies' decision-making and functioning, there had been a breach of Article 10 ECHR (para. 111). Thus, in essence, there were no sufficient guarantees in terms of *workforce* diversity (*supra*), which can be denoted as internal *source* pluralism (Napoli 1999, 13–14). In its 2012 *Centro Europa 7 S.R.L. and Di Stefano v. Italy* judgment, the Court moreover formulated a requirement of *ownership* diversity (Napoli 1999, 11–13), which may be seen as external source pluralism, for the entire audio-visual media sector, which includes both public and private actors. Specifically, it criticized the failure, by the government, to allocate, in accordance with the applicable legislative framework, to the applicant company the necessary frequencies for television broadcasting, resulting in reduced competition (para. 156). The ECtHR accordingly held that Italy failed to comply with its positive obligation to "put in place *an appropriate legislative and administrative framework to guarantee effective pluralism*" (emphasis added) (para. 156).

Over the past ten years, the Court also discussed the importance of the Internet in the context of having access to news and information in general. It did so, first of all, in 2009, in *Times Newspapers Ltd (nos. 1 and 2) v. the United Kingdom*, which related to a rule under UK law whereby a new cause of action in libel proceedings accrued each time defamatory material on the Internet was accessed (para. 3; see also *Węgrzynowski and Smolczewski v. Poland* 2013, para. 59). In that case, the ECtHR indeed found that "[i]n the light of its accessibility and its capacity to store and communicate vast amounts of information, the *Internet plays an important role in enhancing the public's access to news* and facilitating the dissemination of information in general" (emphasis added) (para. 27). In addition, it pointed to "the substantial contribution made by *internet archives* [of online news media] to *preserving and making available news* and information", finding that they "constitute an important source for education and historical research, particularly as they are *readily accessible to the public and are generally free*" (emphasis added) (para. 45). In 2012, in *Ahmet Yıldırım v. Turkey*, the Court, ruling concerning the incidental blocking, by the national authorities, of access to the applicant's site,

held that "the *Internet* has now become o*ne of the principal means by which individuals exercise their right to freedom of* expression and *information*, providing as it does *essential tools for participation in activities and discussions concerning political issues and issues of [public] interest*" (paras 38 and 54). Yet, only a few months later, the 2013 case of *Animal Defenders International v. the United Kingdom*, in which the applicant complained about the prohibition on paid political advertising on television and radio services (para. 3), arguing that limiting its scope to those means for transmitting information was illogical given the comparative potency of newer ones such as the Internet (para 119), put forward that:

> Notwithstanding [...] the significant development of the internet and social media in recent years, there is *no evidence of a sufficiently serious shift in the respective influences of the new and of the broadcast media* in the respondent State to undermine the need for special measures for the latter (emphasis added) (para. 119).

Today, in any case, it can no longer be denied that the Internet, as a means for the transmission of information, and news in particular, is in fact (at least) as influential as television and radio. Indeed, reports polling people's media usage show that digital channels have become equally, if not more, important than traditional ones (television, radio, print) for accessing news (Vandendriessche and De Marez 2020; Newman et al. 2020; Commissariaat voor de Media 2020).

In summary, Article 10 ECHR, as interpreted by the European Court of Human Rights, comprises a *right to receive a diversity of perspectives and opinions on matters of public interest.* While news media (the 'press') have a duty to inform the public regarding such matters, States bear the ultimate responsibility to guarantee that people, through those channels, also receive a diversity of perspectives and opinions in relation to them. In the past, they have accordingly been required to take positive action, that is to say adopt an appropriate legislative and administrative framework, in particular to ensure source diversity in the audio-visual media sector, specifically in view of its traditional wide public reach. Article 10 of the Convention further safeguards a *right to receive (public interest) content via the Internet*, which today, as a means for the transmission of news and information in general, is (at least) as influential as television and radio. Therefore, it is argued here that States should be required to ensure that the public can receive a diversity of perspectives and opinions, that is to say *viewpoints*, concerning matters of public interest through digital (news) channels.

5. Takeaways in respect of news recommendation

As explained above, online news (content) flows in abundance as there exist numerous online news media (sources). In principle, it should therefore suffice for users to consult several news websites and

apps (diversity in *content as sought*) to consume a diversity of viewpoints. However, if access to news via those channels is delimited by 'interest-matching' algorithms, that possibly no longer holds true, specifically in the case of implicit personalisation (*supra*). Hence, the simplest way to preserve 'diversity in *content as consumed (after recommendation)*' would be to require online news media not to personalize their homepages based on inferred user interests (by default).

Imposing such a measure on other online news distributors would likely be less effective. In particular, it would not remedy any lack of diversity in users' initial selection of news sources and/or content while using social networks, search engines or news aggregators (*content as sought*). Moreover, as search engines and social networks also distribute content other than news, they may not be the most suitable ones to be regulated in this context. The same goes for news aggregators, which usually focus precisely on providing users with an 'interest-matching' (rather than a diverse) news offer. The European Court of Human Rights furthermore confirmed that online news media generally, that is to say unless the particular nature of the Internet requires otherwise, assume the same duties and responsibilities as the traditional 'press' (Council of Europe/European Court of Human Rights 2020, 104; *Delfi v. Estonia [GC]* 2015, paras 112–113; *Magyar Tartalomszolgáltatók Egyesülete and Index.hu Zrt v. Hungary* 2016, paras 61–62). Accordingly, to ensure that the public can indeed, through the online press, receive a diversity of viewpoints concerning matters of public interest, States may be required to regulate the use of recommender systems by online news media as suggested above.

Such regulation would arguably not violate the latter's freedom of information and ideas as laid down in Article 10(1) ECHR (*supra*). Article 10(2) ECHR sets forth that restrictions on this liberty can be justified provided that they are prescribed by law and necessary in a democratic society for one of the legitimate purposes it enlists, including the protection of the rights of others. Admittedly, there is extensive ECtHR case-law granting the press increased protection in the enjoyment of their Article 10 rights (Macovei 2004, 11). Explaining this approach, the Court consistently refers to the essential role they play in a democratic society (Clayton and Tomlinson 2010, 288). As such, the press' special status goes hand in hand with their duty to provide the public with access to public interest content (Mendel, n.d., 13) (*supra*). If they fail to do so, restricting the freedom of the press may be considered necessary with a view to remedying that (Clayton and Tomlinson 2010, 278). As the ultimate guarantor of pluralism, the State must moreover take measures to ensure that different perspectives and opinions are accessible through the press (*supra*). Accordingly, in case recommendation by (many) online news media impedes people from receiving diverse viewpoints in relation to public interest matters, it may indeed be justified for policy makers to intervene.

In the past, the idea of external pluralism informed media policy in respect of private sector news media, whether audio-visual (*supra*) or print (Valcke 2004, 124–25). Hence, it is important to note that the measure proposed requires online news media to provide an internally *accessible* rather than an internally *pluralistic* service and should accordingly not be perceived as entailing a departure from previous policy considerations. Conversely, public service media, and in particular broadcasters, in any case, have long been obliged to ensure an internally pluralistic service (*supra*). Naturally today, the same demands are imposed on public broadcaster online news brands ('Beheersovereenkomst VRT (2021-2025)' 2020).

In that context, States may also consider imposing a requirement on the latter to use so-called 'diversity-enhancing' algorithms. This comes down to a demand for internal *access* pluralism. Reference can be made to the five-year management contract recently concluded between the Flemish Community (Belgium) and the Flemish public broadcasting organization (VRT). It states that the latter commits to "developing and using public broadcasting algorithms that can broaden taste rather than create filter bubbles" ('Beheersovereenkomst VRT (2021-2025)' 2020, 14, 36–38). The idea is to understand, by analyzing users' inferred and/or registered interests, which viewpoints concerning matters of public interest they did not yet consume nor would, so that articles containing such content can be recommended to them.

States may go even further by setting up an entirely new distribution channel, that is to say a news aggregator that uses a 'diversity-enhancing' algorithm. Ideally, such a system would collect news articles on matters of public interest (content) from multiple reliable online news media (sources) and recommend those articles to users that reflect viewpoints that they did not yet consume nor would having regard to their inferred and/or registered interests. Importantly, such a service would, by fully taking benefit of the advantages offered by the Internet in terms of source and content diversity, guarantee 'access diversity' even in case of a lack of diversity in *content as sought* and/or *content as consumed before recommendation*, thus stimulating diversity in *content as consumed after recommendation* without users having to go to different online news media themselves (*supra*).

At the same time, it should be noted that it is not easy to develop 'diversity-enhancing' algorithms. More specifically, it appears to be technically very challenging to date to adequately detect viewpoints in text. Another difficulty is that recommender systems often do not take into account what users consume through other online news distribution channels. It therefore remains unclear to what extent recommendations would actually increase the total diversity in consumption via digital channels. In addition, as recommendation goes hand in hand in hand with the processing of personal data, data protection regulations, specifically the General Data Protection Regulation ('GDPR'), must be complied

with. Finally, further research is required into whether the use of 'diversity-enhancing' recommender systems can be considered compatible with any negative obligations States assume to refrain from acting in such a way that it violates human rights (Lavrysen 2016). To prevent a violation of individuals' fundamental right to receive information and ideas, for example, it should be assessed to what extent such policy action may constitute a 'direct influence on individuals' reading behavior' (*supra*).

6. Conclusion

Today's online informational environment is complex, raising difficult (legal) questions. Internet users have access to news through a variety of distribution channels, and increasingly in a personalized manner. Where online news (content) flows in abundance in view of the existence of numerous online news media (sources), the design of recommender systems largely determines 'access diversity', specifically the diversity of *content as recommended*. Regardless of the diversity in explicit user choices (*content as sought*), it may decrease or increase diversity of *content as consumed (after recommendation)* ('exposure diversity'). On the basis of these findings, this chapter puts forward a version of Napoli's 'diversity chain' adapted for the digital era.

It further argues that States are, pursuant to Article 10 ECHR, required to guarantee that citizens can receive a diversity of viewpoints concerning matters of public interest via digital channels. The simplest way for them to do so would be to tackle any possible risks that *state-of-the-art* recommender systems may bring in that regard, by requiring both public and private sector online news media to not engage in implicit homepage personalization (by default). At the same time, States could exploit the potential of 'diversity-enhancing' *public service* algorithms. These systems could, as soon as any remaining technological, GDPR and fundamental rights concerns surrounding them are resolved, be used by public broadcaster online news brands or implemented in a newly established news aggregator.

Bibliography

Ahmet Yıldırım v. Turkey. 2012, ECLI:CE:ECHR:2012:1218JUD000311110. ECtHR.

Animal Defenders International v. the United Kingdom. 2013, ECLI:CE:ECHR:2013:0422JUD004887608. ECtHR.

ARTICLE 19. 2013. 'Internet Intermediaries: Dilemma of Liability'. ARTICLE 19. https://www.article19.org/data/files/Intermediaries_ENGLISH.pdf.

'Beheersovereenkomst VRT (2021-2025)'. 2020. https://www.vrt.be/nl/over-de-vrt/beheersovereenkomst/.

Bernstein, Abraham, Claes de Vreese, Natali Helberger, Wolfgang Schulz, Katharina Zweig, Christian Baden, Michael A. Beam, et al. 2020. 'Diversity in News Recommendations (under Review)'. *ArXiv.Org*, no. arXiv:2005.09495 [cs.CY] (May). http://arxiv.org/abs/2005.09495.

Bruns, Axel. 2019. *Are Filter Bubbles Real?* United Kingdom: Polity Press. http://politybooks.com/bookdetail/?isbn=9781509536443.

Centro Europa 7 S.R.L. and Di Stefano v. Italy. 2012, ECLI:CE:ECHR:2012:0607JUD003843309. ECtHR.

Charter of Fundamental Rights of the European Union. 2000. OJ C 326/391. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:12012P/TXT.

Clayton, Richard, and Hugh Tomlinson. 2010. *Privacy and Freedom of Expression*. Second Edition. Oxford, New York: Oxford University Press.

Commissariaat voor de Media. 2020. 'Digital News Report Nederland 2020'. https://www.mediamonitor.nl/wp-content/uploads/Reuters-Digital-News-Report-2020.pdf.

'Cookiebeleid (Mediahuis)'. n.d. Accessed 30 March 2021. https://mediahuis.be/cookiebeleid/.

Council of Europe/European Court of Human Rights. 2020. 'Guide on Article 10 of the European Convention on Human Rights (Freedom of Expression)'. https://www.echr.coe.int/Documents/Guide_Art_10_ENG.pdf.

'Data and Personalization (Google)'. n.d. Accessed 21 September 2020. https://myaccount.google.com/data-and-personalization.

'Data Policy (Facebook)'. n.d. Facebook. Accessed 19 September 2020. https://www.facebook.com/privacy/explanation.

De Standaard. 2019. 'Mis niets over uw favoriete thema's via "Mijn dS"'. *De Standaard*, 4 March 2019. https://www.standaard.be/cnt/dmf20190304_04229666.

Delfi v. Estonia [GC]. 2015, ECLI:CE:ECHR:2015:0616JUD006456909. ECtHR.

Erdoğdu and İnce v. Turkey. 1999, ECLI:CE:ECHR:1999:0708JUD002506794. ECtHR.

European Commission. 2020a. '2020 Rule of Law Report'. Communication COM(2020) 580 final. https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1602583951529&uri=CELEX%3A52020DC0580.

———. 2020b. 'Proposal for a Regulation of the European Parliament and of the Council on a Single Market For Digital Services (Digital Services Act) and Amending Directive 2000/31/EC'. COM(2020) 825 final. European Union.

European Commission, and TNS Opinion & Social. 2016. 'Media Pluralism and Democracy'. Special Eurobarometer. European Union. https://op.europa.eu/en/publication-detail/-/publication/74281af8-d3dc-11e6-ad7c-01aa75ed71a1#document-info.

European Data Protection Board (EDPB). 2019. 'Guidelines on the Processing of Personal Data under Article 6(1)(b) GDPR in the Context of the Provision of Online Services to Data Subjects (Version for Public Consultation)'. Draft Guidelines 2/2019. https://edpb.europa.eu/sites/edpb/files/consultation/edpb_draft_guidelines-art_6-1-b-final_public_consultation_version_en.pdf.

'Facebook'. n.d. Accessed 3 April 2021. https://www.facebook.com/.

'Feedly'. n.d. Feedly. Accessed 23 October 2020. https://feedly.com.

'Flipboard'. n.d. Flipboard. Accessed 23 October 2020. https://flipboard.com/.

Gauch, Susan, Mirco Speretta, Aravind Chandramouli, and Alessandro Micarelli. 2007. 'User Profiles for Personalized Information Access'. In *The Adaptive Web: Methods and Strategies of Web Personalization*, edited by Peter Brusilovsky, Alfred Kobsa, and Wolfgang Nejdl, 54–89. Lecture Notes in Computer Science. Berlin, Heidelberg: Springer. https://doi.org/10.1007/978-3-540-72079-9_2.

'Google News'. n.d. Google News. news.google.com.

Helberger, Natali. 2011. 'Diversity by Design'. *Journal of Information Policy* 1: 441–69. https://doi.org/10.5325/jinfopoli.1.2011.0441.

Helberger, Natali, Kari Karppinen, and Lucia D'Acunto. 2018. 'Exposure Diversity as a Design Principle for Recommender Systems'. *Information, Communication & Society* 21 (2): 191–207. https://doi.org/10.1080/1369118X.2016.1271900.

Informationsverein Lentia and others v. Austria. 1993, ECLI:CE:ECHR:1993:1124JUD001391488. ECtHR.

Joris, Glen, Frederik De Grove, Kristin Van Damme, and Lieven De Marez. 2020. 'News Diversity Reconsidered: A Systematic Literature Review Unraveling the Diversity in Conceptualizations'. *Journalism Studies*, August, 1–20. https://doi.org/10.1080/1461670X.2020.1797527.

Kaye, David. 2018. 'Report on Artificial Intelligence Technologies and Implications for the Information Environment'. A/73/348. Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression. https://www.un.org/ga/search/view_doc.asp?symbol=A/73/348.

Lavrysen, Laurens. 2016. *Human Rights in a Positive State: Rethinking the Relationship between Positive and Negative Obligations under the European Convention on Human Rights*. Intersentia. https://doi.org/10.1017/9781780685311.

Macovei, Monica. 2004. *Freedom of Expression. A Guide to the Implementation of Article 10 of the European Convention on Human Rights.* 2nd ed. Human Rights Handbooks 2. Council of Europe.

Magyar Tartalomszolgáltatók Egyesülete and Index.hu Zrt v. Hungary. 02-02-20216, ECLI:CE:ECHR:2016:0202JUD002294713. ECtHR.

Manole and Others v. Moldova. 2009, ECLI:CE:ECHR:2009:0917JUD001393602. ECtHR.

McQuail, Denis. 1992. *Media Performance: Mass Communication and the Public Interest*. London; Newbury Park, Calif.: Sage Publications.

Mendel, Toby. n.d. 'Freedom of Expression: A Guide to the Interpretation and Meaning of Article 10 of the European Convention on Human Rights'. Centre for Law and Democracy. https://rm.coe.int/16806f5bb3.

Möller, Judith, Natali Helberger, and Mykola Makhortykh. 2019. 'Filter Bubbles in the Netherlands?' Hilversum: Commissariaat voor de Media: Amsterdam School of Communication Research (ASCoR) and Institute for Information Law (IViR). https://dare.uva.nl/search?identifier=2d8db249-cb3a-4eae-b514-56897c08a2d6.

Möller, Judith, Damian Trilling, Natali Helberger, and Bram van Es. 2018. 'Do Not Blame It on the Algorithm: An Empirical Assessment of Multiple Recommender Systems and Their Impact on Content Diversity'. *Information, Communication & Society* 21 (7): 959–77. https://doi.org/10.1080/1369118X.2018.1444076.

Napoli, Philip M. 1999. 'Deconstructing the Diversity Principle'. *Journal of Communication* 49 (4): 7–34. https://doi.org/10.1111/j.1460-2466.1999.tb02815.x.

Napoli, Philip M. 2011. 'Exposure Diversity Reconsidered'. *Journal of Information Policy* 1: 246–59. https://doi.org/10.5325/jinfopoli.1.2011.0246.

Newman, Nic, Richard Fletcher, Anne Schulz, Simge Andı, and Rasmus Kleis Nielsen. 2020. 'Reuters Institute Digital News Report 2020'. Reuters Institute for the Study of Journalism. https://reutersinstitute.politics.ox.ac.uk/sites/default/files/2020-06/DNR_2020_FINAL.pdf.

'News360'. n.d. News360. Accessed 22 October 2020. http://news360.com/.

'NewsDNA'. n.d. Page. Accessed 7 October 2020. https://www.ugent.be/mict/en/research/newsdna.

Nielsen, Rasmus Kleis, Alessio Cornia, and Antonis Kalogeropoulos. 2016. 'Challenges and Opportunities for News Media and Journalism in an Increasingly Digital, Mobile and Social Media Environment'. DGI(2016)18. Council of Europe.

'Our Use of Cookies and Similar Technologies (Twitter)'. n.d. Twitter. Accessed 19 September 2020. https://help.twitter.com/en/rules-and-policies/twitter-cookies.

Pariser, Eli. 2011. *The Filter Bubble: What the Internet Is Hiding from You*. New York: Penguin Press.

'Privacy (Microsoft)'. n.d. Accessed 21 September 2020. https://privacy.microsoft.com/nl-nl/.

'Privacy Policy (Google)'. n.d. Accessed 22 September 2020. https://policies.google.com/privacy?hl=en-GB#whycollect.

'Privacy Policy (Mediahuis)'. n.d. Accessed 30 March 2021. https://www.mediahuis.be/privacy-policy/.

'Privacy Settings (Yahoo!)'. n.d. Accessed 21 September 2020. https://consent.yahoo.com/v2/partners?sessionId=3_cc-session_09f8d3de-152c-4e87-86cf-c23930eddee4.

Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the Protection of Natural Persons with Regard to the Processing of Personal Data and on the Free Movement of Such Data, and Repealing Directive 95/46/EC (General Data Protection Regulation) (Text with EEA Relevance). 2016. http://data.europa.eu/eli/reg/2016/679/oj/eng.

Schwartz, Barry. 2018. 'Google Admits It's Using Very Limited Personalization in Search Results'. Search Engine Land. 17 September 2018. https://searchengineland.com/google-admits-its-using-very-limited-personalization-in-search-results-305469.

Stark, Birgit, Daniel Stegmann, Melanie Magin, and Pascal Jürgens. 2020. 'Are Algorithms a Threat to Democracy? The Rise of Intermediaries: A Challenge for Public Discourse'. Governing Platforms. Algorithm Watch. https://algorithmwatch.org/en/wp-content/uploads/2020/05/Governing-Platforms-communications-study-Stark-May-2020-AlgorithmWatch.pdf.

'The Guardian's Global Edition'. n.d. The Guardian. Accessed 22 September 2020. https://www.theguardian.com/international.

The Sunday Times v. the United Kingdom (No.1). 1979, ECLI:CE:ECHR:1979:0426JUD000653874. ECtHR.

Thurman, Neil, and Steve Schifferes. 2012. 'The Paradox of Personalization: The Social and Reflexive Turn of Adaptive News'. In *The Handbook of Global Online Journalism*, 373–91. John Wiley & Sons, Ltd. https://doi.org/10.1002/9781118313978.ch20.

Times Newspapers LTD (Nos. 1 and 2) v. the United Kingdom. 2009, ECLI:CE:ECHR:2009:0310JUD000300203. ECtHR.

'Twitter'. n.d. Twitter. Accessed 3 April 2021. https://twitter.com/home.

Valcke, Peggy. 2004. *Digitale diversiteit: convergentie van media-, telecommunicatie- en mededingingsrecht*. Larcier, Brussel.

Vandendriessche, Karel, and Lieven De Marez. 2020. 'Imec.Digimeter 2019'. Digimeter. Imec. https://www.imec.be/nl/expertises/imec-digimeter/digimeter-2019.

Verdegem, Pieter, and Eva Lievens. 2016. 'Towards a Public Service Algorithm That Promotes News Diversity'. In *6th European Communication Conference*. http://hdl.handle.net/1854/LU-8149757.

Vermeulen, Judith. 2020. 'Recommended for You: "You Don't Need No Thought Control". An Analysis of News Personalisation in Light of Article 22 GDPR'. In *Privacy and Identity Management. Data for Better Living: AI and Privacy*, edited by Michael Friedewald, Melek Önen, Eva Lievens, Stephan Krenn, and Samuel Fricker, 190–205. IFIP Advances in Information and Communication Technology. Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-42504-3_13.

Węgrzynowski and Smolczewski v. Poland. 2013, ECLI:CE:ECHR:2013:0716JUD003384607. ECtHR.

Wojtas-Kaleta v. Poland. 2009, ECLI:CE:ECHR:2009:0716JUD002043602. ECtHR.

Zuiderveen Borgesius, Frederik J., Damian Trilling, Judith Möller, Balázs Bodó, Claes H. de Vreese, and Natali Helberger. 2016. 'Should We Worry about Filter Bubbles?' *Internet Policy Review*, March.