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DOI
10.1177/1750635220906254

Publication date
2022

Document Version
Author accepted manuscript

Published in
Media, War and Conflict

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Citation for published version (APA):
https://doi.org/10.1177/1750635220906254

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This is a post-print version of the article published in Media, War & Conflict and accessible via the following link:

https://doi.org/10.1177/1750635220906254

To cite this article:

Personalizing the war: Perspectives for the adoption of news recommendation algorithms in the media coverage of the conflict in Eastern Ukraine

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Abstract

The use of algorithmically tailored individual news feeds is increasingly viewed as an important strategy for accommodating consumers’ information needs by legacy media. However, growing personalization of news distribution also raises normative concerns about the societal function of legacy media, in particular when dealing with personalization of traumatic and polarizing content. To extend the discussion of these concerns beyond the current focus on the role of news personalization in Western democracies, this article offers a conceptual assessment of perspectives for adopting personalization for conflict coverage in Ukraine and Russia, where media systems enjoy a lesser degree of press freedom. Using the coverage of the conflict in Eastern Ukraine as a case study, the article offers a conceptual framework for assessing the impact of personalization on the distribution of conflict-related news in a non-Western context.

Introduction

The increasing use of computational technologies for news reporting has a profound impact on media ecosystems. The formation of new data-driven journalistic practices (Loosen et al., 2017) changes how legacy media produce news stories and communicate these stories to their audiences. An important part of these practices is the personalization of user interactions with media content through individualized news feeds (Thurman et al., 2018). By offering personalized news recommendations, legacy media accommodate users’ information needs and individualize their consumption experience. Such a personalized approach increases consumers’ loyalty towards specific news brands and optimizes their engagement with the offered content (Epure et al., 2017).

Because of its commercial benefits, news personalization is viewed as a highly promising innovation for the news industry (Newman, 2018). However, several scholars (Helberger, 2016; Zuiderveen Borgesius et al., 2016) argue that the deployment of individualized news feeds has significant implications for the societal role of legacy media. These implications include possible constraints for editors’ and readers’ autonomy, a lack of transparency in how personalization works and a fear of social sorting (Zuiderveen Borgesius et al., 2016: 10). The discussion, however, tends to focus on the impact of personalization on user information diets in Western media systems and is yet to investigate its effects for different media systems and specific formats of reporting.

In our article, we use a conceptual approach to discuss how news personalization can influence conflict reporting in non-Western media systems characterized by limited press freedom. Using as a case study two post-socialist countries, Ukraine and Russia, we critically review existing scholarship on how their legacy media cover the war in Eastern Ukraine and ask if existing concerns on conflict reporting can be mitigated or worsened.
through the adoption of news personalization. By combining insights from the fields of media ethics, conflict coverage and digitalization, we propose a conceptual framework for assessing possibilities and threats of personalizing conflict coverage under the condition of tightening government control on the media sphere.

**News distribution via algorithmic personalization systems**

The ‘computational turn’ (Coddington, 2015) in journalism has led to fundamental changes in legacy media practices, ranging from the introduction of new distribution channels to a reinterpretation of journalistic roles. In this article, we focus on the impact of technological innovations on news distribution by discussing the use of algorithmic personalization systems. These systems allow media organizations to filter data flows and distribute news content according to individual users’ interests. By doing so, personalization not only accommodates user preferences better, but also transforms their information diets (Helberger, 2015; Möller et al., 2018).

The impact of changing distribution practices on the societal functions of legacy media is a subject of intense academic debate. The influence of news personalization on the public sphere is increasingly recognized (Helberger, 2016; Möller et al., 2018), yet assessments of its effects vary between different forms of personalization systems. User-driven personalization (arranged by users via the subscription to specific topics/authors, for example) can increase selective exposure, whereas system-driven personalization (enabled by news recommendation algorithms predicting user preferences) can affect information consumption without making users aware of it (Zuiderveen Borgesius et al., 2016).

Another concern about system-driven personalization is related to the formation of so-called ‘filter bubbles’ (Pariser, 2011) or ‘echo chambers’ (Sunstein, 2017). The deployment of algorithmic systems programmed to satisfy existing user interests can increase societal polarization by limiting their exposure to attitude-incongruent views. Zuiderveen Borgesius et al. (2016), however, argue that there is little empirical evidence to confirm the existence of filter bubbles, while Möller et al. (2016) demonstrate how news personalization can actually diversify the public sphere by surfacing news located in the long tail of the public agenda.

**Implementation of system-driven news personalization**

In this article, we focus on system-driven personalization, the origins of which can be traced back to the rise of recommendation systems (RSs) in the 1990s. Ricci et al. (2015: 1) define RSs as software tools that ‘provide suggestions for items that are most likely of interest to a particular user’. Inspired by the growing need for (online) information filtering, RSs quickly became a powerful means of helping users to find relevant information in multiple domains. Following the increasing adoption of RSs by search engines (Hannak et al., 2013) and social media (McGee, 2013) in the 2000s, legacy media organizations also turned towards content personalization to counter cannibalization of their audience and increase ‘stickiness’ (Thurman and Schifferes, 2012) of their websites.
The logic behind news recommendation algorithms is similar to the one used by RSs in other domains such as music or cinema. The increased speed of content production creates conditions under which news readers are not able to consume all available stories. To address the potential information overload, news outlets deploy algorithmic systems which filter news content and order it according to user preferences (Morales et al., 2012). To identify user preferences, personalization systems collect data about different forms of interactions with news content, such as clicks or time spent on the web page and then make predictions based on specific algorithmic designs (Möller et al., 2018).

The accurate estimation of user preferences is a major criterion of personalization effectiveness because wrong predictions leave users unsatisfied and can decrease their trust in the system (Swearingen and Sinha, 2002). Bozdag (2013) identifies several categories of algorithms used to predict user preferences, varying from popularity-based algorithms (ordering news depending on how often they are read) to content-based ones (ordering news depending on how similar they are) and collaborative filtering-based ones (ordering news depending on how similar are users reading them). Content-based algorithms are the most common approach for news personalization, followed by hybrid approaches combining content-based and collaborative filtering (Karimi et al., 2018).

While ways to implement news personalization vary significantly between media outlets, Weber and Kosterich (2018) describe a usual scenario of system–user interactions in the context of news. After entering the system (e.g. by registering on the news website), users are usually asked to provide starting information (e.g. by stating the country of origin) or crosslink their personal data (e.g. by authorizing via a Google account). The system then uses this information to produce first suggestions: for instance, a popularity-based algorithm can recommend stories which currently have the largest number of views, whereas a collaborative-filtering one can suggest a story clicked by users with similar profiles (e.g. of the same age or from the same region). Then, the system collects explicit (e.g. the user’s evaluation of recommendations) or implicit feedback (e.g. time spent on pages recommended by the system) and retrains the preference model for each specific user.

While the logic behind personalization is relatively simple, the development of an effective news personalization system involves multiple challenges. For instance, there is little information about user preferences before the user actively starts engaging with the system (the so-called ‘cold start’ problem; see Lam et al., 2008). Another challenge is the limited lifespan of news stories that distinguishes news recommendations from recommendations for other domains (e.g. music or movies), where products and preferences tend to be more persistent (Morales et al., 2012). Additionally, the high societal relevance of the news media also raises multiple normative requirements for the design of RSs, in particular when dealing with highly polarizing news content.

**System-driven news personalization and media ethics**

The importance of addressing the use of news personalization for conflict coverage is related to ethical concerns about the growing deployment of computational technologies by journalistic institutions (Helberger, 2015). Many of these concerns align with general
considerations about the use of big data such as acquiring permissions for data use and the proper informing of users (Richards and King, 2014). Other concerns, however, are particularly relevant for news media and deal with the impact of algorithmic systems on transparency of news production and journalistic credibility (Diakopoulos and Koliska, 2016).

The deployment of system-driven personalization raises a separate set of ethical challenges. Individualized news feeds can help citizens to make better decisions and promote media diversity (Helberger et al., 2018), but can also undermine readers’ autonomy and modify their information diets. Furthermore, the obscurity of news recommendation algorithms can erode the audience’s trust (Diakopoulos and Koliska, 2016) and facilitate the use of personalization for manipulating public opinion. The current rise of so-called ‘fake news’ (Lazer et al., 2018) and computational propaganda (Wooley and Howard, 2017) is a telling example of the negative impact that manipulative use of content distribution systems has on the public sphere.

So far, the debate about the impact of news personalization on the public sphere develops primarily in the context of Western democracies. However, such a narrow focus limits the applicability of existing research for other regions, where personalization is increasingly adopted by legacy media. The current lack of studies on news personalization in non-Western contexts leaves behind a number of important questions such as to what degree existing assessments of personalization are specific to liberal media systems and how individualized news feeds can influence the public sphere in countries characterized by limited press freedom.

Ethical concerns about the role of personalization in partially free and non-free media systems are particularly significant in the case of reporting formats dealing with polarizing topics such as armed conflicts. The use of individualized news feeds can enhance media’s capabilities for promoting reconciliation and contribute to peaceful conflict transformation by offering users a more balanced view (Bastian et al., 2019). However, it can also facilitate selective conflict coverage that impedes de-escalating behaviour via the personalized distribution of one-dimensional views on the conflict. In the latter case, personalization can also lead to increased societal polarization and reinforce stigmatization of specific individuals and groups.

**Same, but different: Legacy media in Ukraine and Russia, and news personalization**

*Characteristics of the Ukrainian and Russian media systems*

Both in Ukraine and Russia, media landscapes are characterized by close ties between the political and media systems, but the nature of these ties is different. In Russia, a ‘paternalistic tradition’ (Vartanova, 2019) has shaped the nature of the media system and led to the introduction of state subsidies and policies intended to guarantee the dominance of federal media. Together with growing authoritarian tendencies in the political sphere, it led to an extremely high politicization and the lack of political pluralism in mass media, as the majority of legacy media organizations became aligned with the state (Vartanova, 2019).
In Ukraine, the media market is dominated by oligarchs, who are often directly or indirectly involved in the political sector (Panchenko and Rybak, 2019). The relationship between oligarch-controlled media and the state in Ukraine is less straightforward than in Russia because Ukrainian oligarchs often use their media to criticize the Ukrainian government. In order to counteract the oligarchic influence, Ukraine has recently introduced laws to improve media ownership transparency; however, the effects of these measures remain limited (RwB, 2019a).

The intense politicization of legacy media leads to significant limitations of press freedom in Ukraine and Russia. In the press freedom index (RwB, 2019b), Ukraine is ranked 102nd out of 180 countries, whereas Russia is ranked 149th. Journalists in both countries experience obstacles in their daily routines, in particular in Russia where violent attacks against media practitioners occur frequently and the legal framework undermines independent journalism (RwB, 2019c). While the state of press freedom in Ukraine has improved after the ousting of President Yanukovych in 2014, the beginning of the conflict in Eastern Ukraine made both Ukrainian and Russian authorities toughen their control on media organizations as a response to the ongoing crisis (Freedom House, 2017a, 2017b).

Despite limited press freedom, legacy media in both countries rapidly adapt to technological innovations. While broadcasting remains the major source of information in the two countries, an increasing number of Ukrainian and Russian citizens use online media to consume news (Deloitte, 2017; RwB, 2016). The digitization of media spheres extends possibilities for independent news outlets (e.g. Hromads’ke in Ukraine, and Medusa in Russia), but also creates additional opportunities for disseminating fake and propagandist content. These possibilities for media instrumentalization are also amplified by the bilingualism of a large part of the Ukrainian audience. While the use of Russian does not automatically mean an eagerness to consume Russian propaganda, it increases the probability of exposure to Russian media products, which are often instrumentalized by the Russian authorities as part of the information warfare (Makarets, 2017).

**News personalization in Ukraine and Russia**

The digitization of legacy media in Ukraine and Russia also involves the growing adoption of news personalization (Makhortykh and Wijermars, 2019). Because of the limited number of studies exploring the impact of the computational turn on regional legacy media, there is no comprehensive overview of how personalization develops in Ukraine and Russia. To address this gap, we provide a brief literature-based overview of personalization-related developments in the media sphere in the two countries.

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1. Despite being based in Latvia, Meduza is commonly treated as a Russian media outlet (see, for instance, Lehtisaari, 2015, and Bassil-Morozow, 2018), because of its primary focus on the Russian market and its editorial team being largely composed of former members of the Russian online newspaper Lenta.ru.
2. For some exceptions, see Vartanova and Lukina (2014), Daucé (2017) and Makhortykh and Wijermars (2019).
Similar to the West, the deployment of system-driven personalization by legacy media in Ukraine and Russia was preceded by its adoption in the e-commerce sector. The first major regional platform utilizing RSs for recommending media content was Imhonet, which was founded in 2007 (Polisuchenko, 2016). After Imhonet’s success, other commercial platforms such as Afisha (Stravinskaia, 2008) and Megafon (Polisuchenko, 2016) started employing personalization for recommending different types of content. These developments took place more actively in Russia, primarily because of the country’s larger media market and higher competition between local media organizations in comparison with Ukraine.

Following the growing use of RSs by online retailers, regional media companies also became interested in individualized content delivery. As in the West, where the adoption of system-driven personalization was driven by Facebook and Google, Russian social media and search engine companies became a major driving force behind the development of personalization systems. Yandex, the Russian corporation specializing in internet services, started personalizing search results in 2011 (Kanin, 2016) and deployed a personalized news stream known as Yandex Zen in 2015. Similarly, Vkonakte, a Russian social media giant, started personalizing its news feed in 2016 to prevent users from ‘suffocating in the information stream’ (Amzin, 2017).

In contrast to the active deployment of system-driven personalization by media corporations, legacy media in Ukraine and Russia remain rather slow in terms of adopting personalized systems for news delivery. Despite this slowness, the importance of personalization as part of a modern journalism business model is increasingly recognized in both countries (Deloitte, 2017; Golubev, 2018; Petrenko, 2015; RIA Novosti, 2013). In particular, regional media practitioners note that personalization is essential for countering the information overload and promoting more niche context (Larot, 2013).

While personalization is recognized as an important component of the computational turn in journalism, regional legacy media are yet to adopt it on a large scale. The reasons behind it are manifold, but the major reason seems to be related to difficulties associated with the integration of individualized news delivery into existing business models (reflected, for instance, in the limited recognition of the differences between ad and news personalization) and also high implementation costs for system-driven personalization. Also, some practitioners such as Navosha (2014), the head of Sports.ru and Tribuna.com, and Tokarev (2013), the head of Rambler News, note concerns about the balance between personalized content and editorial autonomy.

Under these conditions, system-driven personalization is still more intensively deployed by (primarily Russian) news aggregators such as Yandex Zen and Rambler. A few legacy media outlets in Russia, such as Vesti and Rossiiskaia Gazeta, combine user-driven personalization (e.g. the possibility to subscribe to specific topics/authors) with system-driven personalization (e.g. by offering algorithmic recommendations for promoting partner news content). In Ukraine, the use of personalization is mostly confined to recommendations based on popularity metrics (e.g. the number of views) and content categories (i.e. related news items): examples include such outlets as Segodnia and Liga.net.
Covering the war in Eastern Ukraine: Conflict reporting in Ukraine and Russia

Historical background of the conflict in Eastern Ukraine

The conflict in Eastern Ukraine started in the spring of 2014, following the ousting of the Ukrainian President, Viktor Yanukovych, in the course of Euromaidan protests. The crisis of legitimacy of the new pro-Western government (Sakwa, 2014: 129–131) was amplified by the fear of restrictions of Russophone Ukrainians’ rights and worsened by the prominent role of Ukrainian nationalist groups during Euromaidan (Zhukov, 2016). These concerns became a starting point for a series of protests against the post-Euromaidan government, in particular in the Eastern and Southern regions of Ukraine, characterized by a large concentration of ethnic Russians and a high level of support for Yanukovych.

The post-Euromaidan tensions in Ukraine were used by the Kremlin to establish control over the Crimean peninsula and hold a referendum, following which Crimea was annexed by Russia. The annexation prompted a new wave of protests in mainland Ukraine, which culminated in the takeover of government buildings in Donetsk and Luhansk by pro-Russian activists. These actions were followed by the announcement of the formation of the Donetsk and Luhansk People’s Republics, known respectively as DNR and LNR (Makhortykh and Sydorova, 2017). The increasingly violent nature of the protests was amplified by the appearance of armed groups of Russian paramilitaries (e.g. the group led by Igor ‘Strelkov’ Girkin which captured Sloviansk). The growing level of violence forced the Ukrainian government to announce the beginning of the anti-terrorist operation in Eastern Ukraine.

The conflict in the region escalated in May 2014, following the presidential elections in Ukraine and the self-determination referendums in DNR and LNR. The intensification of the confrontation between the Ukrainian army/pro-Ukrainian paramilitaries and pro-Russian insurgents led to multiple casualties among civilians, including the passengers of flight MH17 brought down on 17 July, and the fast deterioration of the humanitarian situation in the region. Despite the intense resistance from the insurgent side, which presumably received military support from Russia (Czuperski et al., 2015: 5), pro-Ukrainian forces managed to recapture the majority of territory held by LNR and DNR until August 2014.

The major change in the course of the conflict happened in the second half of August when, during violent clashes around Ilovaisk, insurgent forces started their counteroffensive. The counteroffensive which, according to the Ukrainian side, was supported by regular Russian units (Czuperski et al., 2015) resulted in heavy losses among the Ukrainian troops, which were forced to retreat. The subsequent advancement of insurgent forces ended with the signing of the first Minsk agreement on 5 September which established a ceasefire between Ukraine and DNR/LNR.

The ceasefire held till January 2015, when a new round of fighting started, culminating in brutal clashes at Donetsk airport and around Debaltseve. The advancement of DNR and LNR forces, which captured Donetsk airport in January and eventually forced the Ukrainian army to retreat from Debaltseve in February, resulted in the signing of the second Minsk
agreement. Since then, the conflict primarily transitioned to the trench warfare phase, characterized by less intensity of fighting with a few occasional eruptions of violence such as the ones in Mar’inka in June 2015 or Avdiivka in January 2017.3

Conflict coverage in Ukrainian and Russian media

From its beginning in 2014, the conflict in Eastern Ukraine has been covered extensively by legacy media in Ukraine and Russia, the two main sides involved in the conflict. Existing studies (Boyd-Barrett, 2017; Fengler et al., 2018) looking at the coverage of the conflict in legacy media indicate significant differences in the way it is presented in Ukrainian/Western and Russian outlets. In the latter case, the predominant narrative revolves around the protection of the ethnic Russian population from ‘the worst of fascist cruelties’ (Boyd-Barrett, 2017), whereas the majority of Ukrainian and Western media interpret the conflict as an instance of Russian aggression.

Despite different interpretations of the war in Donbas in the two countries, structural similarities between the Ukrainian and Russian media systems translate into similar features of the media coverage of the conflict. As in the case of other recent conflicts, media coverage of the war in Eastern Ukraine is characterized by more fragile state control over journalistic narratives compared to the pre-digital time (Pantti, 2016: xvii). In both Ukraine and Russia, digital technology helps journalists to challenge official interpretations of the conflict and provide a more comprehensive coverage of the events.4 Similarly, the use of digital media opens additional possibilities for contextualizing the conflict and circumventing censorship filters (Makhortykh and Sydorova, 2017).

The potential for more constructive conflict coverage, however, is far from being realized. In their comparative study on the media coverage of the conflict in Eastern Ukraine in Ukraine, Russia, Poland and Sweden, Nygren et al. (2018) note that Ukrainian and Russian media tend to present the war in Donbas in rather simplistic terms. The prevalence of the ‘Us–Them’ paradigm is attributed both to official information policies in relation to the war and struggles of individual journalists who try to balance their obligation to be impartial with feelings of patriotism. Under these circumstances, legacy media often adopt the language of state authorities and avoid giving voice to representatives of the opposing side. This self-censorship also leads to the avoidance of news stories which could damage the reputation of the side to which journalists belong (Nygren et al., 2018).

Another important aspect of the media coverage of the war in Donbas are the increasing news dissemination capabilities of Ukrainian and Russian legacy media. Makhortykh and Bastian 9Digital news distribution makes the conflict more visible and allows regional media organizations (e.g. Russian NewsFront or Ukrainian StopFake) to share their interpretations

3 As the article was written in winter 2018–2019, we did not account for recent developments in the conflict and its coverage following the election of Volodymyr Zelensky as the new President of Ukraine.

4 An example of such use of digital technology is the project StopFake. It is devoted to debunking false information about the conflict, including stories appearing in mainstream Russian media (Khaldarova and Pantti 2017; Simons, 2016).
with a global audience. Potentially, it also enables a more nuanced understanding of the conflict, as regional media are able to communicate views of different parties to the international community.

At the same time, increased dissemination capabilities also facilitate the distribution of fake and propagandist content. In their study on fake news related to the conflict and disseminated via Russian TV and social media, Khaldarova and Pantti (2017) demonstrate that Russian legacy media frequently employ false stories (e.g. a story about a child crucified by Ukrainian soldiers in Sloviansk) to stigmatize the Ukrainian side. Similarly, in a study of fake news on Ukrainian legacy media, Kitsa (2017) notes that, despite Russian media being more active in distributing fake news, Ukrainian news outlets also occasionally distribute disinformation.5 These observations align with the findings from a study on computational propaganda in the post-Euromaidan period in Ukraine by Zhdanova and Orlova (2017), who argue that both Ukrainian and Russian actors instrumentalize the mass media to manipulate public opinion and facilitate state propaganda efforts.

The media coverage of the conflict in Eastern Ukraine is also characterized by an extensive range of reporting formats. Similar to foreign journalists, who, as Pantti (2019) shows in a study on individual reporting on the conflict in Eastern Ukraine, often use their social media accounts to provide personal commentary in relation to the war, a number of Ukrainian (e.g. Serhii Loiko) and Russian (e.g. Dmitry Steshin) reporters use social media to enhance conflict coverage. A number of legacy media also initiated special multimedia projects devoted to the conflict in Eastern Ukraine such as video series (TSN, 2018) and photo stories (Turchenkova, 2015). This extension of conflict coverage beyond hard news format opens new venues for war reporting which can promote a more nuanced view on the conflict.

This constructive potential, however, is often undermined by the affective language used by Ukrainian and Russian media in relation to the opposing side (Nygren et al., 2018). Highly emotional terms such as ‘terrorists’ and ‘criminals’ are often supplemented with narrative tropes evoking memories of earlier conflicts such as WWII. These parallels are more blatant in the case of Russian media, which often label the Ukrainian side as Nazi successors (Nygren et al., 2018; Sazonov et al., 2016). The Ukrainian media adopt a more sophisticated approach by emphasizing the continuity between WWII Ukrainian fighters and the contemporary Ukrainian army.6

Possibilities and threats of personalized conflict coverage: A conceptual framework

Following our examination of the media coverage of the war in Eastern Ukraine, we introduce a conceptual framework for assessing how it can be impacted by news

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5 In addition to the examples provided by Kitsa (2017), there are other cases when Ukrainian media were involved in the distribution of fake content. One particularly notorious example is the dissemination of stories about the use of nuclear weapons by Russia against Ukrainian troops near Luhansk airport (see, for instance, Ukrain's'ka Pravda, 2014, and Channel 24, 2014).

6 One particular example is the battle for Donetsk airport, which was frequently compared in Ukrainian media with the Battle for Stalingrad. See, for instance, Lashenko (2014), Segodnia (2014) and Unian (2015).
personalization. We start by mapping factors which can influence the implementation of news personalization in Ukraine and Russia. While the list is not an exhaustive one, we suggest that these factors are particularly relevant for personalizing conflict coverage in the context of our study. Then, we discuss possibilities and threats of news personalization for conflict coverage.

**Political system.** A number of studies (Hallin and Mancini, 2004; Hanitzsch et al., 2011) demonstrate the impact of political systems on how news is produced and disseminated. The majority of existing studies focus on personalization in Western democracies, where the adoption of algorithmic systems is primarily determined by the media market. In the case of defective democracies, however, the deployment of innovations is dependent on political actors, who have a disproportionate influence on the media sector (Bastian, 2019). In Ukraine and Russia, these actors often treat media organizations as part of their power structures (RwB, 2016: 14), which leads to a slower adoption of technological innovations unless these innovations can be easily instrumentalized for promoting certain agendas.

The nature of the political system also has implications for the design of news personalization. Gillespie (2014) argues that algorithmic systems are not neutral and political valences are inscribed into their designs. Helberger (2019) develops this argument by demonstrating how different models of democracy imply distinct designs of news personalization. In the liberal democracy model, for instance, the best-fit news personalization is particularly relevant in the light of its focus on citizens’ autonomy and sovereignty. By contrast, in the deliberative model, the integration of diversity metrics in the personalization design is essential because this model encourages exposure to different viewpoints. The same logic is applicable for defective democracies, where dominant political values (e.g. paternalism in Russia) influence the functions of legacy media and designs of algorithmic systems used by them.

**Legal framework.** Regulatory frameworks are important elements of media ecosystems which determine possibilities and limitations for adopting innovations. Amongst other things, these frameworks define norms of data protection and consumer rights that are highly relevant for personalization deployment. Unlike many Western democracies, where regulatory frameworks usually account for the latest technological developments, Ukraine and Russia are slower in recognizing the legal consequences of the datafication of the media sector (Kovalov, 2016; Kukushkina et al., 2017). The processing of personal data remains a rather vague area in post-socialist countries’ legislation but, in both countries, data processing in the context of journalistic activities is partially exempted from existing regulations, thus facilitating the deployment of news personalization.

Legal regulations also influence the selection of news content available for being recommended (e.g. by prohibiting stories detrimental to the state’s image), thus impacting personalization on the content supply level. Both in Ukraine and Russia, topics related to the conflict in Eastern Ukraine are seen as particularly sensitive ones, thus stories produced by the opponent’s side often fall into the category of legally prohibited content (Freedom House, 2017a, 2017b). These regulatory frameworks put additional limitations on the adoption of personalization, in particular in the case of legacy media.
In addition to the selection of available content, the legal framework influences how personalization systems are designed. The growing regulation of algorithmic systems has direct implications for these systems’ design, in particular in the European Union where the GDPR promotes more human interpretability for algorithmic systems (Goodman and Flaxman, 2017). Similarly, the anti-discrimination legislation drives the ongoing debate on integrating fairness into the design of algorithmic systems to prevent their negative social impacts (Lepri et al., 2018). The slow adaptation of post-socialist legal frameworks to datafication so far limits the influence of this factor; a major exception is media regulation in Russia, where increasing attention is devoted to the integration of control mechanisms into the design of automated distribution systems (Matsakis, 2017).

**Press freedom.** The state of press freedom influences both the range of content available for personalization and the probability of stakeholders instrumentalizing it for their own purposes (e.g. to boost their image through individualized news distribution). In countries with limited press freedom, the deployment of algorithmic personalization depends not only on its potential for engaging the audience, but also its possible effects on state control over the mass media. These concerns are less relevant for Ukraine with its more pluralistic media sphere than for Russia, where authorities exercise significant control over legacy media (Vartanova, 2019). Under these conditions, Russian media organizations can be less inclined to adopt personalization to avoid limiting state control over what citizens read.

The effects of varying degrees of press freedom on the design of personalization can be compared to the ones related to legal frameworks. In the case of systems with a high degree of press freedom, this factor is presumably not going to have a substantial impact on personalization solutions. However, in non-free systems or those that are only partially free, it can lead to a different set of design requirements influenced by local actors’ inclination to instrumentalize these systems. An example of such requirements is the increasing push of Russian authorities for tighter control over the public sphere, which translated into additional design requirements for news aggregators (Matsakis, 2017).

**Journalistic values.** The production of news is shaped by values that underlie journalists’ work. Determined by their training and the country’s journalistic traditions, these values include both media organizations’ principles and individual journalists’ beliefs. Journalistic values differ between Eastern and Western Europe (Głowacki et al., 2014), in particular in relation to the high degree of journalism’s instrumentalization and its profound connections to the political sphere in the former region. Additionally, both in Ukraine and Russia, journalistic education is slow in adapting to new digital environments (RwB, 2016; Vartanova and Lukina, 2017). Together with a limited awareness of possibilities/threats related to datafication, the weak power distance between journalists and stakeholders (Hanitzsch et al., 2011: 281) can lead to a more uncritical perception of personalization in post-socialist countries.

The importance of the relationship between values and algorithmic design is increasingly recognized in academic scholarship (Vallor, 2016). Not only do developers’ personal values affect their decision-making processes, but also the resulting systems often promote or
undermine specific values. The discussion so far is focused primarily on general moral and ethical values but the same consideration applies to journalistic values such as objectivity. Under these conditions, the interpretation of specific values in the journalistic community can have a significant effect on personalization system designs.

**Awareness of algorithmization and datafication.** The awareness of possibilities and threats of personalization determines the willingness of legacy media to incorporate them into their working routines. Particularly in Russia with its larger and more competitive media market, legacy media increasingly acknowledge commercial benefits of personalization, while devoting limited attention towards its societal implications (Makhortykh and Wijermars, 2019). Seen as an integral means for dealing with the information overload, personalization is referenced as a major innovation in the media sector in Russia (PWC, 2017) and an influential characteristic of the media market in Ukraine (Ishenko, 2017).

Journalists’ awareness of the current state of AI-driven systems is also important for the design of news personalization. Such awareness is essential for understanding which technical solutions can be applicable for specific tasks, and positioning these solutions within the larger structure of the news industry. The limited presence of the filter bubble imaginary in Ukraine and Russia (Makhortykh and Wijermars, 2019) results in the absence of many Western normative concerns and leads to local media’s focus on personalization designs that maximize user engagement for monetization purposes. Comparing the two countries, Russia is a more favourable environment for personalization because of a higher awareness of commercial benefits of datafication and a larger and more innovation-responsive media sector.

**Promoting diversity, understanding and journalistic values through personalization**

We suggest that a main benefit of personalized conflict coverage is the possibility to enhance information diversity at the user level (Bastian et al., 2019). By tracking the history of user exposure to conflict-related news, personalization can expose users to various viewpoints on the conflict. Individualized news feeds can burst so-called ‘filter bubbles’ by recommending stories that communicate various viewpoints on the conflict or highlight the role of underrepresented actors. By doing so, personalization can mitigate the negative impact of journalistic self-censorship, which influenced conflict coverage both in Ukrainian and Russian media (Nygren et al., 2018). While individual news stories will still be influenced by the attitudes of their authors, the provision of a comparative perspective can decelerate the formation of one-sided views on the conflict.

The realization of such a system will require the use of diversity metrics, such as the ones optimizing for long-tail diversity or serendipity in news recommendations (Vargas and Castells, 2011). Their exact implementation depends on which aspects of conflict coverage are to be diversified. Source diversity is the easiest one: by identifying news sources (information which usually is part of stories’ metadata) to which users are exposed, it is possible to diversify their information diets by recommending stories coming from different sources (e.g. the ones rarely visited by the users) (Bastian et al., 2019). Viewpoint diversity can be implemented in a similar way, in particular considering that post-socialist legacy
media often demonstrate distinct editorial lines in reporting on the conflict in Eastern Ukraine.

In cases when a news source can be associated with different interpretations of the conflict, the viewpoint expressed in a specific piece can be detected via lexical analysis. Conflict reporting is often characterized by the recurring use of emotionally charged terms that are indicative of specific conflict parties’ views (e.g. ‘karateli’ is a term usually used by pro-Russian reporters). Finally, actor diversity can be implemented via named entity recognition based on an online referential system (e.g. Wikipedia). By automatically recognizing actors’ names in the text and then identifying their role (e.g. politician or activist), it is possible to extend the range of visible actors beyond political or military elites.

These personalization techniques can counter a one-sided representation of the conflict in Eastern Ukraine (e.g. the Russian aggression vs Ukrainian Nazi schemata, see Khaldarova and Pantti, 2017). They can also expose similarities in the use of affective language between different conflict parties, thus countering the manipulative use of conflict coverage and, potentially, increasing the self-awareness of media practitioners. By doing so, news personalization can also strengthen journalistic values (e.g. objectivity and impartiality) which are hard to sustain at the time of conflict, when journalists often struggle both with official and self-censorship.

Two major obstacles for the practical realization of such diversity-sensitive personalization systems are the limited incentive for Ukrainian and Russian legacy media to implement them and potential resistance from the audience. A limited incentive for the diversification of conflict coverage is related to the fact that post-socialist legacy media often focus exclusively on either pro-Ukrainian or pro-Russian viewpoints and, while doing so, tend to advance stakeholders’ interests. While this tendency makes it easier to use personalization for more independent outlets (e.g. news aggregators), it is still potentially possible for regional media, especially as they already often provide users with a personalized selection of partner-provided news/advertisements. By adding a section of news stories from moderate ideological ‘counter-partners’, these media can increase user engagement by confronting them with “the different”, purposefully or via serendipitous encounters’ (Helberger, 2015: 1328).

Another obstacle concerns the eagerness of the audience to consume attitude-incongruent news. Existing studies demonstrate that direct exposure to attitude-incongruent stories does not automatically lead to their acceptance by the users (Bail et al., 2018). Two points, however, are important: firstly, while not every news reader is interested in a middle ground, online news consumption is still dominated by mainstream and not polarized media outlets (Flaxman et al., 2016). Secondly, instead of confronting users with attitude-incongruent stories, personalization can highlight stories with a high degree of consensus (e.g. the ‘purple feed’ combining views from different sides of the ideological spectrum, see Babaei et al., 2018). The latter option can also be strengthened through self-actualization mechanisms encouraging user interactions with individualized news feeds (Sullivan et al., 2019).
Threatening social cohesion, journalistic professionalism and autonomy through personalization

Personalized conflict coverage also poses a number of threats, including the possibility of undermining journalistic values, enabling masked censorship and increasing societal radicalization. By ignoring values such as impartiality or objectivity, news recommendation algorithms can undermine journalists’ working routines and subvert their societal functions. Similarly, by ignoring or distorting journalistic standards (e.g. by recommending stories from unreliable sources), personalization systems can aggravate negative features of media coverage of sensitive topics such as armed conflicts.

Such threats to journalistic professionalism also include the dissemination of propaganda and disinformation. Individualized news feeds can advance the objectives of actors who have access to the recommendation mechanism by propagating a pre-selected set of interpretations. The use of personalization for purposeful interference in the public sphere opens new options for instrumentalizing conflict coverage. By integrating propagandist stories into users’ news feeds, personalization algorithms can make them more visible and convincing (Bastian et al., 2019).

Complementing the effects of promoting propaganda, personalization can also facilitate the filtering of news items which contradict agendas of specific stakeholders/authorities. By pushing undesired stories out of the public agenda, personalization can enable masked censorship, which is less obtrusive than direct prohibition of certain views (on censorship in Ukraine and Russia, see Freedom House 2017a, 2017b). Under the pretext of satisfying users’ information needs, such individualized censorship can make the audience used to news filtering. In this way, personalization can strengthen stakeholders’ control over journalistic narratives and, together with journalistic self-censorship, limit the possibilities for constructive conflict coverage.

Furthermore, exposure to attitude-incongruent news can exacerbate polarization instead of countering it (Bail et al., 2018). In this way, the use of personalization for diversifying conflict coverage can lead to further radicalization, in particular considering the polarizing nature of conflict-related news. The threat of personalization-driven polarization is particularly pronounced in the case of traditional approaches to conflict coverage which put a strong emphasis on visible effects of violence (Galtung, 2002). By exposing users to violence-focused opponents’ narratives, individualized news feeds can facilitate dehumanization of the opposing side instead of countering it.

The above-mentioned threats are particularly pronounced in the case of simple value-agnostic personalization systems, which are strongly influenced by popularity metrics such as views/clicks. Such systems are frequently employed by Ukrainian and Russian legacy media, and offer limited personalization per se. Instead, they primarily rely on the idea of promoting the most popular content independently of its relationship with journalistic values. These systems are particularly susceptible to third-party manipulations, where stories can be promoted or demoted using views/clicks generated via automated agents. To a certain degree, the same concerns also hold true for collaborative filtering-based
algorithms, which can be subverted using fake user profiles that promote specific news items (Burke et al., 2015).

Discussion

In this article, we conceptually discussed the perspectives of the use of news personalization for conflict coverage in a non-Western context, namely Ukraine and Russia. We argue that news personalization can make conflict coverage more nuanced by exposing readers to diverse interpretations and challenging the overrepresentation of military and political elites. However, the realization of such constructive potential can be crippled under the condition of limited press freedom. In contrast to democratic media systems, in partially free and non-free media systems, news recommendation algorithms can be more easily instrumentalized for promoting agendas of political and economic stakeholders. Under these circumstances, personalization can facilitate the distribution of biased interpretations and serve as a form of computational propaganda.

On the other hand, personalization has the potential to counteract some structural shortcomings specific to conflict reporting in legacy media, in particular the ones coming from partially free and non-free media systems. The deployment of system-driven personalization can partially amend the effects of individual journalists’ self-censorship and expose readers to different viewpoints. It can also mitigate the effect of affective language by either filtering extreme viewpoints out of the individualized news feeds or highlighting that stories produced by the opposite side also feature the same emotions. Finally, the possibility to automatically detect fake content and give warnings to the editorial team via personalization systems can potentially counter disinformation and propaganda.

The practical realization of these beneficial aspects of personalization depends on multiple factors, in particular the willingness of media practitioners to use individualized news feeds for promoting constructive conflict coverage and the willingness of users to consume such content. In the former case, the disproportionate influence of political and economic stakeholders, which is a common characteristic of partially and non-free media systems, is a significant limiting factor. To a certain degree, this limitation can be addressed by the growing number of media NGOs and news startups, which in the case of countries with limited press freedom are often less subjected to existing power relationships, eager to deploy technical innovation and able to influence the public sphere.

In the case of the audience, it is extremely important to strengthen algorithmic literacy to make the public aware of the risks, but also possibilities associated with algorithmically personalized news feeds. It is of utmost importance that users are able to make informed decisions regarding personalization of their news diets and recognize how recommendation algorithms can influence their information consumption under different circumstances. Thus, recognition can motivate the public to push legacy media towards algorithmic transparency similar to how media markets were pushed towards being more transparent about which (political) stakeholders own specific outlets. Such a push can be supported by (inter)national media regulations which should not only tackle the use of algorithms in legacy media from a general perspective, but pay – informed by academic research – special attention to the
effects of personalization in specific formats of reporting and contexts (see, for instance, Van Drunen et al., 2019).

Together, our conceptual observations prompt a strong need for empirical assessment of how attractive personalized solutions are for audiences in non-Western contexts, in particular the ones characterized by limited press freedom, and whether these solutions have the expected effect on the public perception of the armed conflicts. This can be achieved via surveys and/or focus group discussions with users from the respective regions, for instance Russia and Ukraine examined in our study. Similar research was implemented by Szostek (2018) for evaluating how the growing confrontation between Russia and the West is perceived by Russian students and the role of different media formats in forming these perceptions. Another possibility is the use of a controlled environment, where some of the suggested personalization solutions can be implemented and their effects on conflict-related news consumption can be evaluated.

The need for applying our conceptual framework for empirical case studies is particularly pressing considering that news personalization has not yet taken root in many non-Western areas, including post-socialist countries. This specific situation offers a valuable opportunity to integrate some of the normative considerations discussed in this article with future personalization designs. By translating elements of constructive conflict coverage into algorithms’ features (e.g. diversity metrics to recommend stories produced by different conflict parties), legacy media can facilitate conflict resolution (Bastian et al., 2019). The practical implementation of such personalization designs requires significant effort, but non-Western media systems are a promising, albeit challenging, environment for this task.

Our findings also emphasize the need for careful consideration of the perspectives for adopting news personalization in non-free and partially free media systems. Although personalization can be used for challenging state control over information consumption, there is a profound danger of instrumentalizing personalization for reinforcing it. With this in mind, we argue that the current Western-centric discussion on the negative impact of personalization on the public sphere (Pariser, 2011; Sunstein, 2017) should acknowledge other potential risks of individualized news feeds that concern different political contexts and specific forms of news reporting.

References


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