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Personalization Logics and Publics by Design

Jannie Møller Hartley, Anna Schjøtt and Jannick Kirk Sørensen

Introduction

While it might seem like personalization came like a tsunami with the arrival of Netflix, Amazon and Spotify, the first conceptualization of what personalized content distribution could look like was invented already in 1993. A group of students enrolled in the ‘newspapers of the future freshman advisor seminar’ at the MIT Media Lab 1993 developed the first experimental personalized online news site, ‘fishWrap’.¹ Just a few years later, Nicholas Negroponte, founder of the MIT Media Lab, outlined a vision of what he labelled the ‘Daily Me’: ‘Imagine a future in which your interface agent can read every newswire and newspaper and catch every TV and broadcast on the planet, and then construct a personalized summary. This kind of newspaper is printed in an edition of one’ (Negroponte, 1995, p 153).

Negroponte’s vision is often considered the moment that ignited interest in personalization in media, and it is often referenced as the first example of how this could look in practice. Since this initial project, the media landscape has increasingly digitalized the production and more and more media organizations across the globe are experimenting with personalizing their online media content distribution (Newman, 2018; Beckett, 2019). Today, Negroponte’s initial vision no longer seems far from reality. As demonstrated in Chapter 5, the discursively constructed need for personalization in the news industry is intertwined with perceived changes in the audience and transformations of the technological landscape. This chapter picks up where the former left off, by moving beyond the imaginaries of personalization and into the media organizations, exploring the concrete negotiations of how to build ‘good’ personalization and how such processes involved changes in

the constructions of publics. This shift in perspective allows us to critically examine the material and symbolic changes in news organizations and their audience constructions that occur as personalization becomes the ‘natural next step’ for news.

Such a critical perspective is important, because personalization has also been deeply intertwined with critical narratives of ‘filter bubbles’ (Pariser, 2011) and ‘echo chambers’ (Sunstein, 2009). Cass Sunstein (2009) – concerned with the health of the (US) publics sphere – has argued that the algorithmic personalization of news would accelerate the ongoing fragmentation of (US) society (Putnam, 2000). The concerns subsequently led to policy suggestions of regulating the exposure diversity of media (Napoli, 1999, 2011), also via algorithms (Helberger, 2012; Helberger et al, 2015), and specifically in the case of public service media (PSM) (Burri, 2015; Burri and Helberger, 2015).

In this chapter, we do not engage with what recommender systems and personalization might or might not do on a societal level; rather, our interest lies in exploring how personalization projects introduce new ‘personalized logics’ into the organizations and how these new logics induce subtle but significant changes in the media organizations in the way they construct publics, but also why it matters who participates in the ‘constructing’.

We build this argument on two in-depth studies of personalization projects carried out by the authors of the chapter. Concretely, we draw on an almost two-year ethnographic study of a personalization project at a large regional Danish commercial media organization (Schjøtt Hansen and Møller Hartley, 2021) and on an interview study that over four years followed the personalizing of the on-demand streaming platform from a Danish PSM (Sørensen, 2020). We use quotes from interviews, transcripts from meetings we attended and fieldwork observations to exemplify our analytical points.

Both personalization projects ultimately ended with limited impact on the actual distribution of content. At the PSM only a few of the rows of content on the on-demand site were – in some periods – personalized, while the rest remained under editorial control. At the regional media organization they ultimately decided not to implement the recommender system on their online news sites and to instead use the system to produce a personalized newsletter. The fact that both projects had a minimal ‘direct’ impact is what makes them particularly relevant to explore the question of the evolutionary changes that occurred along with these projects. Both projects also had a strong focus on the democratic and publicist element of their personalization projects. While the PSM explicitly mentions ‘the public’ as a defining feature, commercial media organizations in the Nordics have always had a strong focus on the democratic role of news and through that highly democratized ideals of the public they serve, more so than in other media systems (Willig, 2010). This distinct characteristic of Danish

media organizations makes these case studies well-suited for the study of the datafication of public formation by media, because the discussions of ‘how to serve which publics’ are highly explicit in these projects and the new ideals of the public might be more challenged than in more commercial media system contexts. We also observed that these discussions in both the commercial and PSM media organization centre around the same questions and concerns, which allowed us to draw lines across the two cases.

Personalization can technically be produced using different tools. Although the combination of the tools – for example, algorithmic models for filtering and selecting the content – play a central role for the composition of the personalized page, and thus the personalization itself, we will not discuss all the different ways such recommender systems could be comprised. Rather we will engage with how they enabled emerging ‘personalized logics’ to move into the media organizations and how they interact with existing media logics. In the following, we first outline what we mean with ‘personalized logics’ and how that relates to the construction of publics that the media seek to cultivate. We do so by drawing on existing literature on media and algorithmic logics as well as theories of audience construction. Then we empirically describe what we see as the three main logics that sum up ‘personalized logics’: individualism; dataism; and binarity and predeterminedness. These ‘personalized logics’, we argue, become drivers for how media organizations (re)construct their publics, namely as aggregated, predictable and controllable datapoints. This reconstruction of the audience allows the media organizations to engage in new form of publics cultivation – publics by design – as they now materially begin to shape and design the publics they wish to cultivate into these systems. In the last part we move onto discussing the implications of these personalization projects, where we highlight how these ‘personalized logics’ not only influence audience constructions but ‘linger’ in the organizations. Thus, even when the personalization projects fail, they are inducing an ‘invisible revolution’ within the organizations who undergo subtle but significant changes along with these projects.

‘Personalized logics’ and audience constructions

The idea of logics is in no way new to the field of media studies, rather the notion of ‘media logics’ was originally developed by David Altheide and Robert Snow in 1979, during the era of mass media, to describe the logics, norms, routines and formats that come to shape how mass-media content was produced. It was later defined by [Altheide \(2015, p 1\)](#) as a set of ‘rules or codes for defining, selecting, organizing, presenting and recognizing information’. These logics do not dictate but subtly structure how media is produced and disseminated, they provide the interpretative frame for

how to understand media practice. Over the years multiple iterations of the concept have been developed to describe new forms of media logics as the media landscape changed, such as social media logic (Van Dijck and Poell, 2013), new media logics (Chadwick, 2013) and network media logic (Klinger and Svensson, 2015). In his seminal work on the hybrid media system, Andrew Chadwick (2013, p 20) argues that the changes in the media landscape with new emerging logics ‘calls for a reappraisal of the idea of media logic and its disaggregation into different competing yet interdependent logics’. He highlights that new emerging logics do not simply replace existing ones, rather they interact with each other and become hybridized logics. Personalization can be said to bring along yet another set of logics – personalized logic – which become hybridized with the existing hybrid media logics. However, as personalization is enabled via algorithmic techniques and machine learning, as discussed earlier, it is worth touching upon how logics have been conceptualized in relation to algorithms (see, for example, Gaw, 2022).

Robert Kowalski (1979) famously defined algorithms as ‘algorithms = logics + control’, where the notion of logic was used to signify the knowledge that was needed to solve the specific problem, while control signified the strategies that govern the problem solving. He connects the logic component to meaning, while control only is seen as affecting efficiency (Kowalski, 1979, pp 429–431). In the context of recommender systems, the algorithmic logics are related to the ways in which the systems produce meaning, which becomes represented via concrete predictions that guide the selection of content for the individual reader. As illustrated earlier, this meaning making is generally achieved by using different algorithmic systems that use data signals (user behaviour data, news article clicks, article similarity, predictions) to predict what content should be targeted to a specific user.

The notion of ‘personalized logics’ builds on this conceptualization of algorithmic logic as a meaning-making practice that is unique to the system, but also reaches beyond the system. We see them more as a type of media logic, as standardized formats are inherent in these models, which also comes with different norms and routines relating specifically to the distribution of media. Logics, that are often contraposed to existing media logics. It is this latter characteristic that makes it relevant and interesting to explore the implications of personalization for public construction and for the media organization, because as Chadwick notes: ‘media logic provides a useful approach to understanding the power of media and the power relations within media’ (Chadwick, 2013, p 19). Chadwick’s quote here highlights how media logics can both be useful to understand power relations between media and other institutions and sites of communication, such as politics and media or legacy and social media, but also within media. In this chapter we are concerned with the latter as we engage with how the entrance of these

logics and their encounter with existing media logics induce new battles of control over the cultivation of publics but also power asymmetries within the media organizations (see [Chapter 3](#) for analysis of logics in the citizen's public formation).

In [Chapter 5](#) the authors showed how imaginaries of audiences and their technological preferences of the 'printed paper' became a core element in the legitimizing discourse of personalization, but also how the technology the other way around enabled a reimagination of the public as these technologies come with their own ideals of publicness. In this chapter we build on those insights but explore the role of the audience construction in the development process of personalization and recommender systems. The notions of imaginaries, used in [Chapter 5](#), and the notion of audience construction are often used interchangeably. Here we intentionally shift the vocabulary, to signal a move from discourse to practices of news making and distribution. Previous literature has highlighted that audience constructions play a crucial role in the daily routines of news making and presentation ([De Werth-Pallmeyer, 1997](#); [Sumpter, 2000](#); [Coddington, 2018](#)) and thereby are part of the media logics that guide the selection and organization of content.

Historically, the notion of 'audience construction' has been used to describe the way journalists and editors engage with their audience and to challenge the idea that media respond to a pre-existing audience 'out there' in the world. The role of marketing data has been seen as uniquely changing the construction of the audience, and particularly the emergence of audience metrics, which granularized the knowledge available about the audience and made them highly present in the newsroom in real-time (see, for example, [Willig, 2010](#); [Anderson, 2011](#); [Møller Hartley, 2013](#); [Tandoc, 2014](#)). Similarly, recommender systems used for personalization provide certain new ways to know and interact with the audience and thereby in new ways contribute to a (re)construction of the audience.

Pablo [Boczkowski \(2004\)](#) in his work explicated the connection between audiences and technologies using the notion of 'inscription' from Science and Technology Studies (see [Woolgar, 1990](#); [Akrich, 1992](#)), to describe how the intended user – or in the case of media the idealized public – are built into the system. Thus, in this chapter, we engage not only with how the 'personalized logics' produce new ways of knowing and constructing the audience, but also change the way editors and journalists partake in constructing the audience. The latter becomes important to understand the evolutionary steps that these personalization projects induce and helps to underline why even failed projects or minor implementations of personalization also have implications for the media organizations. In the following we first outline the three dimensions that we argue characterize the 'personalized logics' and how they differ from existing media logics. Then we engage with how these logics become drivers in the (re)construction of the audiences, but also

how they are negotiated and adapted in relation to the existing hybridized media logics and existing audience constructions.

Logics of personalization

Individualism

Since the invention of the printing press, media has been a mass-distributed product (be it on the radio, broadcasted or as a printed or online paper) and it was this distributional logic that was dominant when [Altheide and Snow \(1979\)](#) were first conceptualizing the notion of media logics. Over the years the ‘mass’ in mass media has become more segmented via the use of audience data and measurements and as a result more niche and granular audience segments have become the targets and part of the distributional logic of media. However, the current more segmented distribution logic is still considered aimed at a general ‘mass’ out there, which is what personalization is seen as breaking with. As emphasized by an editor at the Danish regional media organization, personalization was a way of “escaping a 200-year-old straitjacket” (interview, 2020). Personalization offers newspapers an escape from serving a ‘mass’ to serving the ‘individual’ and thereby a new distributional logic. The uniqueness of this distributional logic was highlighted by one of the data scientists involved in the personalization project in the Danish regional media organization, who explained:

‘The editor in a city knows everything about that city. It’s not that the machine is smarter than him, but it plays by different rules because it can offer individual things. If the editor were able to offer individual things to all users in that city, then it would be damn amazing if he knew what they should be. The machine knows them a little.’ (Interview, 2020)

He is foregrounding how the machine can come to know the individual and via this ability can select targeted content to their interests, maybe not as well as an editor could, but on a scale that is out of reach for an editor. The scale offered by recommender systems enables a shift from a *logic of mass distribution* to a *logic of individualized, targeted exposure of content*. The value of serving individuals was by the media organizations seen as a way to better serve their ‘publics’.

For the large regional media organization, the potential to become more locally oriented and serve the ‘local democracies’ better was a new and highly valued opportunity. The logic of individualism, while conflicting with the mass media logic, was not seen to conflict with the ideal of serving the (democratic) public – rather the opposite. In the context of the PSM, personalization challenges one of the core PSM characteristics, namely the special construction of ‘public’ as all citizens of a nation-state.

The universal reach of radio waves produced a political-economic logic of ‘universalism’ also when it comes to content (Van den Bulck and Moe, 2018). Personalization is thus normatively in conflict with PSM (Sørensen, 2011, 2013) but can potentially help PSM in demonstrating ‘reach’ – the measure for the percentage of the population using the PSM services, as well as potentially serving viewers’ and listeners’ special interests. Personalization exposes however also PSM’s ‘commercial’ dilemma: at one side politically expected to be competitive and relevant, at the other side being accused of unfair competition based on state aid (Donders et al, 2020). PSM may thus have problems of political legitimacy if exploiting personalization to its maximum.

In both cases, several control strategies to contain who the individual should be and how much space they should be given were discussed and put in place in the media organizations, but the construction of audiences as individuals only referred to a small segment of the actual users, namely the users that they had data on. In both the cases discussed in this chapter, data – or the lack of it – becomes defining for the personalization. At the Danish public broadcaster, for example, only 1 per cent of clicks originate from the few personalized rows on the on-demand site and in the regional media organization the personalization was developed with mainly paying and logged-in subscribers in mind. Thus, the dimension of individualism is linked to the dimension of dataism, which we unfold in the following.

Dataism

The ways in which the system can come to know the individual brings us to the next logic, because it is in a very specific way that the system ‘knows’ the individual, namely via data (audience behavioural data like clicks, and so on), which become processed according to the ‘logic’ of the system. Personalization projects come with *a dataism logic*, as there is a strong ‘belief in the objective quantification and potential tracking of all kinds of human behaviour and sociality through online media technologies’ (van Dijck, 2014, p 198). In the media organizations we observed, they truly believed in the value of data and that this data could become even more valuable via the use of recommender systems. Often, a key driver for personalization is the fact the publisher already has readily available data (Bodó, 2019), as echoed by the project manager in the regional media organization when describing why they had ventured into the personalization project: “We had already built up this large data department and we had all this information about the users and their interests. At the same time, we had a bunch of articles that we found it hard to distribute” (interview, 2020). Personalization was seen to get even more value out of the data than previously. One editor explained how they had been on a year-long journey to better connect journalism and data and

produce what he referred to as “data driven journalism”. At the managerial level at the PSM, they also viewed the personalization project as being part of a larger organizational effort to become a data-driven organization (Sørensen, 2020). This illustrates how data had increasingly become a valorized way of knowing the audience even before personalization, but that personalization as an idea increased the value of data further. As knowledge via data becomes increasingly valorized, the existing logics of the journalistic gut feeling of knowing the audience (see, for example, Willig, 2011) becomes devalorized.

Personalization also induces a process of needing more data. On one side, producing ‘good’ individual recommendations requires large amounts of data. Particularly in the regional media where they wanted to provide hyper-local recommendations, it was seen as essential to have enough data about local consumption so that the system would “get enough data to make a selection for the local user”, as noted by the project manager (interview, 2020). Interestingly, the need for data on audience behaviour to offer personalized recommendations, created yet another quest for data on the results of the recommendations, as the consumption and the front page is unique for each user. This resulted in a form of data puzzle of how to manage the front page: “It becomes sort of mind blowing when you think about it. How are we actually going to relate to the current news flow we have right now, if we cannot see what anyone is seeing?” (interview, 2020). This shift in distributional logic ultimately disassembles ‘the news’ as constituted by a ‘finite arrangement of texts’ (Carlson, 2018, p 5). What we can observe is that existing practices of presenting the news or media content are challenged with the logics of personalization. Previously, the importance and placement of content on the front page was prioritized in relation to the other content available coupled with user engagement metrics, but still with one overall front page. The loss of editorial prioritization practices caused by personalization led to a series of subprojects at the regional media organization. The aim of these subprojects was to ensure that new data-tracking practices were put in place, so that the editors could still assess what each individual was being presented with on the screen. Interestingly, the idea of leaving the ‘public’ all by themselves with no editorial oversight of the content was seen as irresponsible by project managers and editors involved in the personalization project, who struggled to maintain some form of control.

This clash between personalized and existing media logics was even more evident in the control strategies that were developed in both the regional media and PSM. Both decided to implement or discussed implementing personalization on a few selected areas on the online sites (see also van den Bulck and Moe, 2018; Schjøtt Hansen and Møller Hartley, 2021). At the PSM, a personalization specialist explained that despite the technical possibility of their new recommender system, the video on demand service

‘DRTV’ was only personalized to a minor degree and only for the few users using the login feature on the page. Partly this was due to the technical difficulties in scaling up the recommender system, but more importantly, it is also due to editorial hesitation to abandon the position of a mass media by no longer presenting all visitors with the same content (Sørensen, 2020). Relatively few examples of ‘full personalization’ can be found in the media landscape. Swedish regional media organization, MittMedia, represents one of the more extensive examples in the authors’ sample of sites, where only three pieces of news at the top of the site have remained under editorial control.² This illustrates that while personalization might not revolutionize the actual distribution or exposure of the content, the process of personalization did intensify the already existing valorization of data (see, for example, Kristensen, 2021) and further enhances the status of data as a ‘must-have’ resource – the new oil of news (Rotella, 2012). The increased valorization of data systems also led to new organizational dynamics in media organizations, where employees who ‘knew’ and worked with data became more essential in the day-to-day practices of making and distributing news, shifting the power balance in the organizations.

Binarity and predeterminedness

The last dimension of the personalization logics we distilled from the empirical material is related to the logic of algorithmic systems and how they make sense of the world. Algorithmic systems need uniform and strictly codified data to operate, and while this might be easier for commercial products, it’s not that easy for news. In the personalization project at the regional media organization, they were utilizing a recommender system they were building for a sister project, which had the goal of personalizing what deals (coupons for different experiences) to offer their users. However, as the data scientists explained, it was fairly easy to make rules for when a deal should be recommended or not; either it was active and could be purchased or it was no longer active and could no longer be purchased. With news this became more challenging as the boundaries between active and not active were no longer clear-cut. For example, some genres of news like in-depth pieces might be relevant for a longer period, while a story about a traffic jam is only relevant as long as the traffic jam is still there. This binary logic of ‘either or’ conflicted with the existing relational and temporal logics of media, where the relevance of media content is ongoingly determined based on the timeliness of event the content refers to (for example, the traffic jam), but also determined in relation to what new content is produced (see, for example, Møller Hartley, 2011). Such decisions of relevance and deciding what is news are made and changed consistently according to norms and routines (see, for example, Shoemaker and Reese,

1996) and values in the field. However, with the recommender system they have to be predetermined through concrete software rules that the system can handle, introducing a specific *logic of binarity and predeterminedness*. At the regional media this issue led to the development of a ‘control filter’ that would both ensure that journalistic values of, for example, timeliness and localness remained present even after personalizing the distribution. As the editor emphasized during a meeting discussing the future-filtering mechanism: “We need to have some filters relating to time because we cannot have ancient content there. As a news site, it must contain something relatively timely” (meeting transcript, fieldwork, 2020). Concretely, this led to the development of a new metadata ‘tag’ that journalists would have to assign to articles, designating their lifetime. Ultimately, timeliness as a value was reconfigured from a situational and relational value to a numeric and predetermined value. Thus, due to this rule-bound and predetermining software logic, the values went from being ‘decided’ to being ‘designed’ into the system via, for example, tags or rules (see also [Schjøtt Hansen and Møller Hartley, 2021](#)). This ‘publics by design’ is explored in the following – as we show how the new logics of personalization reconfigured the previous audience construction.

Publics by design

With the expression ‘publics by design’ we aim to signal intention rather than coincidence – also an intentional choice of the authors – because this helps to underline a shared finding across the authors’ different studies, namely how personalization, via its different logics, involves a new way of reconstructing – or rather redesigning the ideal publics of media organizations. To explore this, we first return to how these systems come to know their ‘individual users’ and then we engage with how the editors engaged with attempting to locate the ‘right’ public in the data.

Users as aggregated datapoints

As noted previously, the way algorithmic systems, including recommender systems, come to understand the individual is via the input data, but the way it produces meaning of the individual is specific to the filtering model. The choice of model and thereby the core logic of how to compose and serve this new individual is left to the data scientists. In the case of the regional media it was the in-house data scientists who build the system, in the case of the PSM the in-house specialists that tried to configure and adapt a recommender system bought from an external software company, Think Analytics, that normally provides recommender systems to commercial TV. That meant that the system, until modified, was not capable of recommending the latest news

as it was originally designed to recommend the first episode and first season of a TV series. The PSM was thus confronted with the logic of commercial TV.

At the regional media organization, the system was ‘custom built’ to reflect the needs of the news organization, but that required many decisions. A data scientist explained that they had explored both content and collaborative filtering models, which are both popular models for recommendations. They had, however, decided on the collaborative model as the main component of their system. The collaborative model had gained popularity in recent years, as it requires less manual tagging of content and as many organizations already have the user data needed. While editors originally had been keen on the content-filtering model, the decision were in the end left to the ‘data experts’ with the backing of an external personalization expert called in to consult on the project. In a meeting he described the logic that characterizes the collaborative filtering model:

‘The algorithm simply ordered recommendations by finding similarities between users and their reading behaviours: “Someone like you found this article good, and here, ‘like you’ means you have read similar articles.” This, in simple terms, means that if user A reads articles A, B and C, and user B has read A and B, then that person will likely be recommended article C, but in reality, this is a calculation made with thousands of users and complicated linear algebra.’ (Excerpt from observations and interview, 2020)

As the quote illustrates, the model does in fact not deal with individuals, but rather with thousands of aggregated datapoints that become continuously recombined to then produce a representation of the individual in the form of a list of recommendations – a prediction – of what a user might like to read next. This is traced back to the individual users via a user login, a cookie or some other means of identification of the individual user. As described in [Chapter 5](#), users have throughout history been highly abstract entities, that were constructed either by the journalists themselves often based on their own high ideals of democratic citizens – either because data was not available or it was ignored (see, for example, [Gans, 1979](#)). However, with the personalized logics, the audience is abstract in a new way, as sets of nodes and vectors in a database. The data scientists noted in an interview that within the system the recommendations (and thereby the individual user) is constructed within a 50-dimensional space in which the system can find patterns (interview, 2020). This makes the construction impossible to either understand or interact with for both the data scientists and editors, who are limited to interpreting the results of the system. Hence, the audience construction is no longer tied to ideals of the editors or journalists but to the logics of the system.

The personalized logic introduced with personalization also produces a very different construction of the individual, compared to when, for example, an editor constructs an idea of who they are serving, such as thinking of the reader as ‘43-year-old Lisa from the city of Kolding – a middle sized city in Denmark’. While it is an imagined person, it is still a person. Even with audience metrics, journalists would make sense of who the audience was based on the data (see, for example, [Anderson, 2011](#)). With the personalized logics the user is constructed via aggregated datapoints, similar to what [Deleuze \(1992\)](#) has called ‘dividuals’, an unstable cybernetic subject that is continuously constructed out of datapoints, codes and passwords (see also [Zwick and Denegri Knott, 2009](#)). The system is continuously recomposing the individual, based not only on what they click, but also on what other users click, which means the user becomes a modular and dynamic entity assembled in and by accumulated data. Contrary to the use of explicit personalization, where the user creates their own profile – a stable representation of them as individuals – implicit personalization, which is what was used in both projects, dissolves the individual, making the user as fragmentable and combinable as aggregated datapoints (see also [Vedder \[1999\]](#) on de-individualization). As audiences are becoming ‘dividualized’, the power to design publics is transferred into the hands of data science and data analysis departments. Compared to past audience formats that were part of the more segmented media logics of targeting segments based on data (for example, focus groups or later audience metrics), the difference is that here the construction is moved out of the newsroom. Where audience data and reader profiles were interpreted by editors and journalists, here the interpretative work takes place within the system, and it is the data scientists that ultimately decide the logic of interpretation. However, as we shall see in the following section, the editors and project managers feared a loss of ‘the audience-as-publics’ and embarked on developing control strategies.

Finding publics in data

The personalization allowed the media organizations to reinterpret the news value of relevance. As the digital editor stated: “It is a different relevance than the one you get taught when studying journalism, where relevance means the societally important events” (interview, 2020). ‘Relevant’ in the context of personalized news distribution meant content which could engage the audiences, constructing them as consumers, as exemplified by the following quote:

‘It is important that this system will reward the right kind of content, because in our data we can see that the content that really engages our users is something as simple as a news piece regarding a new

store opening because it matters in their daily life as they now have new possibilities to shop in their local area.’ (Interview during fieldwork, 2020)

What this quote helps to highlight is that ‘publics’ are being reconstructed via the data hypothesis of what matters to the audiences. This should be seen in relation to the dataism dimension discussed earlier, and the fact that the traditional journalistic ‘gut feeling’ over the years has become more and more datafied. In turn, this changes what content is deemed important, namely more service or useful content.

With personalization the editors saw the potential to ‘seek out’ new publics via the scalability, namely hyper-local public, as the data editor explained during a meeting:

‘Right now, we do not have a lot of hyper-local content out there because we are collecting, for example, house sales and prizes in joined articles, as they would otherwise be too many small fragments to present for people, but the goal is that these small pieces should have a life of their own. The problem is that right now we do not know who is in the market to read such hyper local news from your local village.’ (Excerpt from meeting during fieldwork, 2020)

While they were unsure of the market for this content, the availability of data and the idea that local content was valuable to the user (based on data) made personalization an ideal way to cultivate this local public, as both could be seen as economically beneficial, and both could deliver on their editorial mission of supporting local democracies. This illustrates how the strengthened logic of dataism both drives ideas of value in terms of utilizing content and data available, but also produced a change in how the audience was constructed. Now the audience, due to the scalable abilities of personalization, could be targeted even beyond segments and in hyper-local communities – one that the digital editor referred to as a ‘street level relevance’ (fieldwork observations, 2020). As he described: “If a house is sold down the street, then that story has value on my street, but probably not three streets away” (interview, 2020). This not only affected how the audience was constructed but shifted what could be considered ‘relevant’ or newsworthy content. Interestingly, this exact type of hyper-local relevancy was what originally provoked Eli Pariser in his popular book (2011) on filter bubbles. In the introduction chapter, Pariser quotes Mark Zuckerberg: ‘A squirrel dying in front of your house may be more relevant to your interests right now than people dying in Africa’ (2011, p 1). With this, Pariser highlights the inherent tension between personal and societal relevance, where the latter has historically been seen as the core task of journalism. The

logics of personalization, therefore, in some ways challenged the notion of societal relevance as the editors, through personalization, could move beyond local segments to individual users (represented in data), making previous non-newsworthy content newsworthy. However, as we will see in the next section, the personalized logics of audiences-as-data were also challenged when confronted with ideals of the audiences-as-publics.

During the personalization projects, the editors involved would, together with the data scientists, also have to assess whether the recommendations by the recommender systems could be deemed ‘good’. At the regional media organization this involved looking at spreadsheets that contained the headlines of the articles that a user had read in the past and comparing that to the suggested articles that the system had recommended. For the data scientists this was a way to do ‘reality checks’ on the machine, in terms of seeing whether the recommendations seemed completely off. However, they did not solely rely on this in testing the machine, but also on multiple accuracy measurements that would help assess the workings of the system. The editors, on the other hand, had to rely solely on these sheets to assess the quality and accuracy of the recommendations, which sometimes became enigmatic for the editors, when reader habits did not fit with their understanding of the audience. During one of these assessment moments, an editor noted in relation to a reader who had read much sports news and as a result was getting several sports recommendations, “[t]here, we might need the manual filter to ensure that there is also a fair amount of local content and not just – what can you say? – sports news” (fieldwork observations, 2020). This tension also emerged in relation to the ideal to cultivate a local public, because in validating the results, the editors were confronted with new data in the form of Excel sheets that showed what any given reader had read in the past (the input data to the personalization system) and the recommendations that the system had produced. While most users were seen as having ‘suitable’ reading patterns, this user had what was considered a ‘wrong’ consumption and as a result the ‘individual’ produced by the system as a result of his sports-heavy input data was deemed problematic. The editor, as a result, found it necessary to push content that could cultivate a form of local public, which the editor considered most important for their audience and the mission of the newsroom.

Concretely, such concerns led to control strategies of ensuring that the individuals produced by the recommender system would also fit the editorial mission. This meant, for example, experimenting with having a filtering mechanism that, similarly to the timeliness, would filter the recommendations so that 50 per cent of what would be recommended would be local content. It also led to discussions of how much to personalize the site and at both the PSM and regional news, the fear of ‘losing’ the collective public led to decisions to only personalize certain locations on the sites to ensure

the most important content was still presented to ‘everyone’ (a fictive construction). This unwillingness to transfer control to the algorithm was also evident during the implementation of personalization at the PSM, where the project leader stressed that the algorithm would not be allowed to dominate publication or exposure for ‘the foreseeable future’, highlighting that: ‘We are a house of editors. We will not for the foreseeable future let the algorithm drive the exposure. We would lose our identity. What would be our livelihood?’ (Sørensen, 2020, p 101). As the quote highlights, it is not only the construction of a certain public, but also the role of media in relation to that public that comes to be at stake. The control of the editorial product is central to the identity of the media. The control strategies should prevent one looking stupid, as the editor at the regional media organization brought up during a meeting: “[T]here are so many ways to make something that will be really stupid because the situation and placement matters” (meeting excerpt, fieldwork observations, 2020). It has been proved difficult to make ‘rules’ to govern the algorithm that could account for all potential situations, relating back to the highly situational logic of the presentation of news (see Willig, 2011; Møller Hartley, 2013).

What these examples illustrate is that while the existing media logics remained dominant in how the content ultimately becomes distributed or was planned to be distributed, the personalized logics provided the editors with completely new ways of algorithmically designing the public they wanted to cultivate based on their interpretation of the data with which they were presented. While reader profiles or audience metrics equally have served to guide the routines of production and presentation of content with the aim of cultivating publics, here the logics of personalization enabled a further shift by enabling the editors to make numeric and predetermined ‘settings’ of cultivation, such as the case with always ensuring 50 per cent local content. This is a temporal shift in the cultivation of publics. Audience metrics allows the editors to make changes post hoc based on clicks, but with personalization they could ex ante decide how to compose their ideal public. Rather than make decisions based on the data of the public, they could now actively pursue the publics they wanted to cultivate – making publics much more of a question of design, namely an entity whose shape and size could be predetermined and made into operationalized rules.

Merging logics and new ‘publics’

The analysis illustrates how a hybridization of existing media logics and personalized logics, on one side, led to transformations in existing understandings of who the public is and how it can be cultivated. On the other side, the strong ideas of serving a collective public and the value remaining for a publisher in presentation of such content, remained at the

core of the discussion and ultimately became the dominant factor in the limited role played by personalization. In many ways these projects revived the classic conflict between the audience-as-publics and audience-as-markets (Ang, 2002; Willig, 2010), while also adding a new twist to the conflict by producing new contexts for audience construction, which as discussed became machinic and where audiences became aggregated datapoints in an unimaginable 50-dimensional space. This is a rather different audience construction process than previously, because the audience is essentially also pushed to the background. They exist purely in data processes, or what Christin (2020) called algorithmic publics, namely as metrified representations of a public. This shift in audience construction on one hand afforded editors new agency in designing publics *ex ante*, rather than having to respond and cultivate the public based on the data *post hoc*. On the other hand, it also limited the editor's agency, as they were forced to engage with the constructions via simple representations in spreadsheets due to the system's lack of interpretability. This lack of access was not unique to the editors because even the data scientists were forced to attempt to make meaning of what the system produced, as one data scientist from the regional media organization noted during an interview: "It can be difficult to say why you get something recommended. That is just what the machine thinks" (interview, 2020). However, the data scientists remained more in control of the systems, by being the ones who would make decisions on input data, model selection and also continuously tweaking the model, thereby directly contributing to the construction of the audience, while the editors were mainly left to add layers of control on top of the machine – such as filtering rules.

This layering practice becomes a clear example of how logics become hybridized even highly materially. However, as we mentioned in the beginning, both these projects ended up with minimal effects on the actual distribution and therefore also in the ways in which the editors began to algorithmically cultivate publics. In many ways this dispels the fear of filter bubbles, because these systems do not revolutionize media practices as expected, which has remained one of the strong negative discourses relating to these projects. With regards to the tale of journalism's crisis in the cultivation of publics, we here see that while the projects are often a response to this discourse and fear of losing the audience (often supported via data), there is more nuance that must be attended to, which comes to the foreground when exploring the hybridization of new and old media logics.

Conclusion

Although the personalized newspaper was originally presented by Negroponte (1995) as a revolution that would bring full consumer freedom

to the user, the actual trajectory of personalized news has rather been a silent and careful evolution (see also [Winston, 1996, 1998](#)). Many of the expectations set up by Negroponte came at odds with the inherent logics in the newsrooms, as shown in this chapter. Given the possibility of creating a personalized newspaper or video on demand service, editors and media organizations envisioned radical changes, but their approach to the development was characterized by caution, as they kept a constant eye on how the algorithms behaved. The fear of losing control and potentially losing identity as a news organization, or PSM, resulted in relatively limited personalization that emulated the existing non-personalized news offer, only with few incremental changes.

However, even if personalization of news does not materialize as a revolution visible to the audience or the public, we argue in this chapter that personalization – more than processing news through algorithms – has introduced or reinforced three new personalized logics in the media organizations. These logics, contrarily to personalization itself, contribute to a transformation in the media organizations, as they via these projects become normalized and affect both how news is perceived and how publics can be constructed. First, we see how news or video content is increasingly becoming constructed via its datafied properties – as just another digital product – as it is produced, distributed and measured via data and digital tools. If a personalized revolution is to be discussed, it is more pertinent to highlight how personalization has silently and gradually contributed to transforming the news story into a news product, and towards finally becoming mere ‘content’ (just as the commercial products that personalization originally was used to sell). This transformation is not without resistance, which was expressed in the tensions between data scientists – representing the normalization of the news as a ‘product’ – and the editors insisting on the uniqueness of news and the wider purpose of media, when attempting to control the algorithms.

The second way to discuss a revolution is to highlight how these logics induced a relocation of power. In the regional media organization, personalization changed the ways in which editors could know and interact with the audience, because editors increasingly rely on data people to produce intelligible ways of understanding how this algorithmic public is produced. The efforts to give more agency to editors to personalize content distribution and cultivate the desired publics also induced a new dependency on, and thus shift in power to, the data scientists.

This essentially moved much decision-making power out of the hands of the editors and into the hands of the data scientists, who through their access to (organizational ownership) and control over the data, as well as model choices, gained a new power through materials (see [Latour, 1987](#)). This power through materials (the data, the algorithms) shifted the long-discussed

boundary between the newsroom and the marketing department (which is where the data scientists were based) (see Gans, 1979; Willig, 2010; Schjøtt Hansen and Møller Hartley, 2021). The revolution may thus not be that visible to the outside, to the public. A public who – if we follow Negroponte (1995) – only waited in vain to dissolve itself into individual personalized news consumers. Despite the fact that personalization is not implemented 1:1, the audiences are nevertheless becoming datafied and subject to the optimization of audiences and attention. The promised revolution of personalized news has in the end perhaps more become an invisible process of business optimization and organizational transformation, which is continuing to change the ways in which decisions of what becomes news and questions of which publics to serve are approached and answered in media organizations.

Notes

- ¹ http://www.mit.edu/afs.new/athena/astaff/reference/olc-stock/stock_answers.real/other/fishwrap
- ² <https://medium.com/@katarinaellemark/why-we-choose-to-simplify-our-newsfeed-7aa2d2268dd0>

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