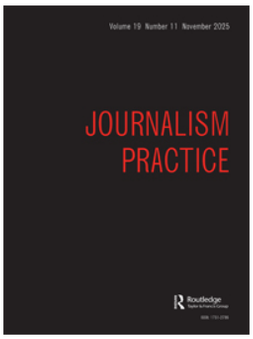

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"I must have clicked on something" – Users´ Experiences and Evaluations of News Recommender Systems

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ABSTRACT

This article takes a user perspective on AI-driven news recommender systems (NRSs). We argue that understanding users' experiences with recommender systems is crucial to assess the implications of AI and automation for the perceived legitimacy of news media in democratic societies. Much of the literature on users and NRSs have either focused on measuring user behavior in controlled set-ups or on the user's imaginaries of personalized recommendations as a phenomenon. In this article we employ a novel methodology for making NRSs tangible by exposing 24 participants to personalized recommendations based on their news use, interviewing them first individually about their experiences and evaluations, and then collectively about the implications of personalized news recommendations. The analysis shows that users make sense of personalized recommendations in relation to personal relevance, the news organization and its business model, and the broader media ecology permeated by algorithmic curation and filtering. Importantly, these findings suggest that personalized news brings about a shift in users' perception of their role on a news site; they are not only participants who can shape their own news experiences, but also actors who are co-responsible for the content they are exposed to.

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News recommender systems; algorithmic experiences; encoding decoding; AI evaluation; materiality; audience turn

Introduction

With the growing adoption of AI systems augmenting journalistic work, scholars and news professionals are turning to historically constituted roles and values of media and democracy to understand technological benefits and consequences. In the case of news recommender systems (NRSs), this is a viable approach to grasp the potential implications of NRSs on journalistic workflows (Cools, Gorp, and Opgenhaffen 2021; Schjøtt Hansen and Hartley 2021), on auditing for bias in news exposure (Einarsson, Helles, and Lomborg 2025; Möller et al. 2018), and on the alignment with editorial positioning and

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values (Helberger, Karppinen, and D'Acunto 2018; Stray et al. 2024; Vrijenhoek et al. 2021). Much of the current research is motivated by a normative democratic ideal of journalism as an institution supporting a diverse and vibrant public discussion and providing citizens with sufficient information to make informed political decisions (Helberger 2019). This line of research is useful to challenge the pragmatism in data sciences, relevant for both the design and evaluation of AI systems, with journalistic values and ethics. However, viewing news reading merely as an informational activity denotes a traditional ideal of journalism which does not completely correspond with news *use* - whether digital or analogue (Peters et al. 2022) - and neglects the function of news as a time-passing activity or a means to engage socially with others (Bird 2009, 2011). Like research on AI and automation systems in other domains, an overemphasis on institutionalized values in the industry or organization in question has the disadvantage of devaluing people and their purposes (e.g., Lomborg, Kaun, and Scott Hansen 2023). In other words, their *experiences* of news.

In this article we build on what has been termed the "audience turn in journalism" (Costera Meijer 2020; Swart et al. 2022). We bring this approach into the research field of personalized news recommendation, which has been dominated by quantitative approaches to the effects of NRSs on news exposure and consumption, and by qualitative approaches to experiences of NRSs through the lens of algorithmic imaginaries. Following Steensen et al.'s (2020) request to move beyond or against "theories of engagement" based on clicks or measurable entities supplied from the media industry, we explore the multiple and complex ways algorithmically filtered news is decoded by audiences (Lomborg and Kapsch 2020). Thus, we approach users' encounters with personalized news as experiences, and analyze how they interact with the recommender systems as part of their daily news use – namely, how they make sense of the data NRSs capture of their personal news use, and how they identify the way NRS's operate at the backend. This provides a lens to understand what people (think they) can do with recommender systems, how they make sense of them, and how they perceive the implications of their relationship with news media. As NRSs are increasingly designed with AI-solutions and implemented across the news industry, understanding users' responses to these systems is crucial to assessing the implications of AI for the perceived legitimacy of news media in democratic societies.

This article reports on a series of six experimental workshops involving a total of 24 participants conducted in collaboration with a Danish tabloid news outlet, Ekstra Bladet (EB), in which we investigated: *how do users experience and evaluate personalized news recommendations in relation to their everyday news use?* The workshop design operationalizes this question by: (1) exposing participants to recommendations generated based on their past reading behavior on the platform, (2) interviewing them individually about their reading practices and assessments of NRS-based recommendations, and finally, (3) facilitating a group discussion with other participants about the differences in what was recommended to them individually and the potential social implications of news personalization. Extending previous work in critical algorithm studies (Lomborg and Kapsch 2020), we suggest that assessing the impact of NRSs requires to approach the study of personalized news experiences through instances where the NRS becomes manifest and tangible for users, allowing them to experience and evaluate the "AI in action". Taking this approach, the article methodologically contributes with new ways of

analyzing how personalization algorithms manifest themselves in everyday news consumption. Theoretically, the article argues, that that personalized news brings about a shift in users' perception of their role on a news site; they are not only participants who can shape their own news experiences, but also actors who are co-responsible for curating their own news. This differs fundamentally from traditional news media consumption and challenges the role and legitimacy of news media in democratic societies.

Personalized News Use

Recommender systems can be viewed as an extension of the broader development of datafied news, where audience data has become a central resource cultivated to inform decision-making about news production and distribution (Petre 2021; Tandoc 2019) and to govern relationships with third-party advertising agencies (Kammer 2023). News recommender systems (NRSs) are commonly deployed on news aggregation platforms (Paliouras et al. 2008), but as data science skills, open source software packages, and computational power have become more accessible, recommender systems are now common features on traditional news sites as well. This development represents a strategic move for news sites, who aim to reduce dependence on digital platforms by acting as platforms in their own right.

NRSs are systems that use audiences' explicit assessments of content or implicit behavioral signals as input to rank and filter content, based on an individual score of relevance. NRSs commonly employ content-based or collaborative filtering algorithms to estimate relevance (Karimi, Jannach, and Jugovac 2018; Raza and Ding 2022), and models for recommendation are increasingly designed using AI, for example using Natural Language Processing and Machine Learning. These AI-driven models are further employed in combination with more simple rule-based logics governing the list of items from which to derive recommendations (Møller 2024). This is a form of personalized curation that is expected to support "stickier" reading experiences (Hindman 2018) and to better match user interests and niche content, leading to a more even exposure to the news catalog (Bodó 2019).

Most of the literature on NRSs has sought to determine the effects of filtering on news exposure and reading experiences, with a particular emphasis on detecting algorithmically-induced filter bubbles (Pariser 2011) and echo chambers (Sunstein 2001). As the empirical evidence for self-confirming feedback loops has been debunked (Bodó et al. 2019; Bruns 2019; Haim, Graefe, and Brosius 2018; Möller et al. 2018), the discussion has turned to exposure diversity as the core value for a constructive public debate (Napoli 1999). Some studies point to a slight decrease in exposure diversity (Einarsson, Helles, and Lomborg 2025; Haim, Graefe, and Brosius 2018) while other to an increase (Möller et al. 2018). The literature has typically used experimental set-ups to evaluate the effects of the recommender systems, quantitatively measuring the changes in exposure to different users. The contradictory results suggest that interpreting the effects of news recommender systems is far from simple, as they tend to be subtle and dependent on contextual traits, such as the system setup, type of media, and users' reading habits on the platform.

A minor body of scholarship engages with the way algorithmic intermediation on news sites affects news reading experiences. Studies drawing on cognitive modeling based on

survey data have, for instance, reported that perceptions of utility, convenience, fairness and transparency are positively associated with user satisfaction and acceptance (Shin 2020; Shin and Park 2019). Other studies draw on qualitative methodologies to unpack audiences' algorithmic literacies and the way they experience transparency and control (Harambam et al. 2019; Swart 2021; Van den Bogaert, Geerts, and Harambam 2022). Harambam et al. (2019), for instance, focus on user's interaction with the possibility self-tailoring the recommendation of news and reports that users are concerned about filter bubbles, missing important information, and the commercial intentions behind recommender systems. Furthermore, the study suggests that audiences feel a loss of agency, as the systems automatically prefigure their preferences based on implicit feedback mechanisms (e.g., clicks or time spent). In other words, scholarship on audience perceptions suggest that recommender systems might make user experiences more satisfying, but at the same time also pose more fundamental questions about their interference with historically established relations between news media and audiences. This article builds on and further extends this work.

Situating News Use in Algorithmic Culture

The theoretical basis for this study stands on what has been labeled "The Audience Turn in Journalism Studies" (Swart et al. 2022). The audience turn gives central priority to the agency of news users and thus challenges the assumption that the news journalists produce is inevitably meaningful, informative, insightful, important or relevant to users. In fact, audience research has consistently shown that for some people other media genres (Edgerly 2022; Moe and Ytre-Arne 2022), institutions (Picone and Vandenplas 2022), or even specific actors, such as the cashier at the local grocery store (Örnebring and Hellekant Rowe 2022), might better satisfy citizens' needs for being informed about current affairs than journalism (de Bruin et al. 2024; Nærland 2020; Van Zoonen 2005). Despite the strong foothold of the audience turn in Journalism Studies, studies of news use in a NRS context have focused primarily on measuring users' engagement with NRS, while ignoring what Steensen, Ferrer-Conill, and Peters (2020) have labelled as the technical-behavioral, emotional, normative, and spatiotemporal dimensions of news engagement. Thus, this article aims to contribute to the limited literature on the users´ experiences of NRS, but from an audience studies' perspective. We follow Costera Meijer (2020), who argue that we need to move beyond the "frequency fallacy" and the "duration fallacy" of particular audience metrics (cf. Costera Meijer and Kormelink 2020, 16). This is especially relevant when analyzing users' experiences of recommended news, as NRSs rely on the numeric feedback loop from users' engagement with specific stories on the site.

Taking inspiration from Lomborg and Kapsch (2020), who adapt Stuart Hall's (1973) semiotic model of the encoding and decoding of media texts to the study of algorithmic experiences, we understand the relationship between users and algorithmically-rendered communication as a process that requires ongoing interpretation and evaluative efforts, which in turn can translate into an active calibration of further interaction with the algorithmic system on part of the user. Building on this idea, we posit that studying user experiences with NRSs in the news requires attending to how news recommendations are configured by users' history of onsite interactions and the preferences they feed

into the recommender system. It also requires attending to: how users mobilize knowledge and expectations based on their previous experiences of interaction with recommender systems; their evaluations of the algorithmic renderings of personalized content on the news site; their further actions (e.g., clicks) to contribute to the ongoing reconfiguring the recommender system (Jensen and Helles 2017). Furthermore, since recommender systems regulate and order both individual communication and collective preferences and sense-making, empirical work with users should strive to include both levels. Finally, we suggest that the study of the way users experience and evaluate personalized news use must seek to make NRSs tangible, and that this can be achieved by studying users in actual, situated encounters with algorithmic news recommendations.

Making Algorithmic News Experiences Tangible

Our methodological approach to address how users experience and evaluate news personalization via recommender systems aims to capture news reading as: (1) an individual material activity serving a variety of everyday purposes (Groot Kormelink and Costera Meijer 2019), and (2) a social activity that involves engaging with societal events, and serves as a foundation for social connection and public discussion (Bird 2011). Specifically, we sought to stage both individual experiences and collective reflections with a series of workshops exposing participants to NRSs based on their reading history or preferences. This approach served both to elicit individual assessments of utility and to inform a collective group discussion about the societal implications of NRSs (Figure 1). For this study, we performed six workshops involving a total 24 individuals of various demographic characteristics (see Table 1 for details about participants in each workshop). The study was done with approval of the Research Ethics Committee at [University and faculty] and with written informed consent from all participants.

Workshop Design

The workshop design encompasses three distinct steps. The first step involved the recruitment of participants and the *training of user profiles*. Participants were recruited through an external panel using a stratified sampling approach. The only inclusion criterion was that the participants had to be readers of EB as the news organization provided the infrastructure needed for the study, namely free logins for the users and the setup of their own

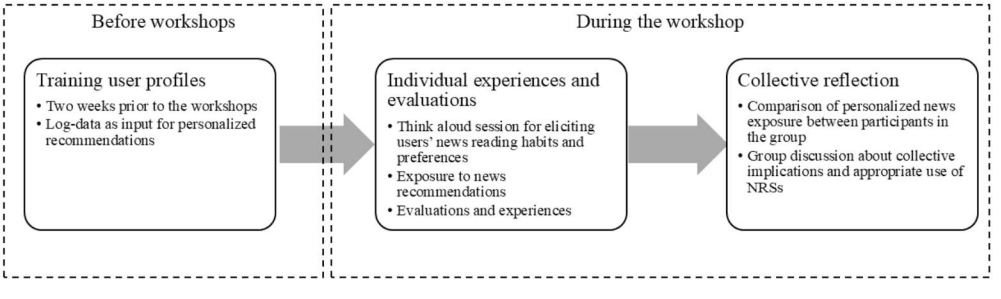

Figure 1. Overview of the workshop design.

Table 1. Overview of workshops and participants. *Data material from the pilot study was excluded from the analysis.

Workshop	Age	Gender = M	Gender = F	n	Duration of individual interview (avg.)	Duration of collective discussion
Pilot*	< 30	1	2	3	44 min	33 min
W1	65+	3	0	3	43 min	28 min
W2	<30	2	3	5	34 min	1 h 04 min
W3	30–50	0	4	4	32 min	47 min
W4	30–50	4	0	4	25 min	39 min
W5	50–65	4	0	4	34 min	45 min
W6	50–65	0	4	4	29 min	30 min
Total (excl. pilot)	49.8 (avg.)	13	11	24	34 min	41 min (avg.)

NRSs linked to the individual user profiles. The news organization was not involved in the data collection or analysis. Two weeks prior to the workshop, participants received a new (test) account and were instructed to use it to read the news on EB's site. The purpose of the test account was to capture behavioral data from the participants prior to the workshop in order to expose them to realistic recommendations in the second step. During the second step, research participants of a similar demographic were invited to a workshop facilitated by us, and were asked about their *individual experiences* of NRSs.

Following insights from audience literature recognizing users' variations in habits for news reading (e.g., Costera Meijer and Kormelink 2020) the first part of the individual interview focused on eliciting individual news reading habits and preferences. Each participant was seated at a desktop computer, which they used to show the interviewer how they typically navigate the site, to talk about what content matched their interests, and whether they could identify the position of the personalized recommendations on the site. While the participant navigated the interface, the interviewer asked the participant into their actions, such as what made them click particular articles and how their actions mirror their news reading habits and preferences. The material interactions captured by screen recordings were not used as an object of analysis but instead served as technique to illuminate the tacit judgements made when interacting with a news site. Hence, dialogues with participants do not merely mirror their interests and preferences, but also less intentional behavior, such as clicking forward-referencing headlines due to curiosity. Moreover, the material interactions also provide details into how participants made sense of the news interface through its design and formatting. Although think aloud exercise was done in an artificial environment, it disclosed information about participants' situation and context of use, as well as about the purpose news served in their everyday lives.

Following this exercise, the participants were exposed to a series of recommendations based on the behavioral traces registered through the test profiles in step 1. The recommendations were presented through an *ad hoc* visualization tool. Figure 2 displays an example of visualization. Each user was exposed to six visualizations based on models used on the news site: two personalized by collaborative filtering, two by content-based filtering and two by most read articles as baseline. Table 2 displays the sequence of exposure. For each exposure participants were asked about which articles they prefer and what they thought of the composition and relevance of the recommendations. This exercise provided assessments of recommendations, but also the reasoning behind such an assessment.

Figure 2. Example of a list set of recommendations. Titles (from left to right) include "Saudi Arabia causes worry: Have infinite finances", "Wet news: Local rain hits", "Producer prices decrease: First decrease since January 2021", and "Number of accidents by roadwork increase: Something must be done".

The individual interviews served the dual purpose of providing accounts of individuals news-reading practices and consequent interpretation and assessment of news recommender systems and of creating a realistic experience of being exposed to personalized recommendations. The latter purpose in turn provided input for the third step, which involved a group discussion aimed at stimulating *collective reflections and evaluations* of the implications of personalized recommendations. For this third step, participants were gathered immediately after their individual interview into a group, where they were invited to compare experiences and share thoughts about their awareness of personalization in media, as well as other insights that emerged during the individual interviews (step 2). The focus group interview was supported by an exercise where participants were asked to compare the recommendations they received with their fellow participants. This served to illustrate both similarities and differences in their individual news exposure, providing a realistic and tangible starting point for discussing potential implications of NRSs for the democratic role of the news media. The group discussion was moderated by a primary facilitator. The workshops were documented by audio-recordings of both individual and group discussions, screen recordings from the individual interviews, and anonymized behavioral data from the training profiles.

Table 2. The sequence of recommendations exposed to participants in the workshops.

	Model	Topical color coding
Visualization 1	Collaborative filtering	No
Visualization 2	Content-based filtering	No
Visualization 3	Most read	No
Visualization 4	Collaborative filtering	Yes
Visualization 5	Content-based filtering	Yes
Visualization 6	Most read	Yes

Data Analysis

The workshops resulted in rich data, which included individual and collective experiences and evaluations of news recommendations. The audio recordings made during the interviews and group discussions were transcribed and qualitatively analyzed in three iterations: the first was an open-ended coding process aimed at identifying experiences and evaluations emerging from the empirical material. Four workshops were distributed between the authors, who independently coded the material. The codes were then discussed among the research team and grouped into associated themes and subthemes, which served as a coding manual for the second iteration (see Appendix Table A1). Before analyzing all interviews, the coding manual was tested by interdependent coding of one interview by two coders. Disagreements were discussed by the coders which resulted in minor adjustments and detailing of the coding manual. The final analytical iteration was an axial coding process (Corbin and Strauss 1990) where the coded data material was analyzed for prevalence of recurring themes, subtopics, overlaps and connections between them. During the coding process, the screen recordings were used to supplement the data analysis when needed with information about what users were exposed to and what content or feature, they were referring to. The coding process allowed us to establish three main findings reflecting broader patterns across the interviews about how news users experience and evaluate the operations of NRSs. The three findings relate to: an individual level, i.e., to what extent users felt the news was relevant to them personally; a meso-level, showing how users interpreted recommendations in relation to the editorial profile and business model of the news media; a macro level relating users´ perception of news recommendations as being tied to broader processes of datafication and filtering in digital communication systems. While the levels are treated as analytically distinct, they also interact and inform each other, for example, as the editorial profile of the site affects the extent to which personalization is accepted by the users.

Experiencing and Evaluating Personalized News Recommendations

Returning to Hall's (1973) idea of decoding as an active interpretive process that media consumers engage in; our analysis illustrates that news users not merely interpret the messages exposed to them but also how they are presented to them. Our analysis shows how people experience and evaluate news recommender systems on three levels: The personal level refers to the extent to which recommender systems meet users' expectations by exposing content matching their personal preferences and reading habits. The organizational levels refer to users' understanding of the institutional conditioning of the content exposed to them related to, for example, the editorial profile and commercial strategies connected to what Hall would consider as "relations of production". The societal level refers to how users interpret and evaluate their experiences in relationship to everyday discourses of algorithmic filtering from social media. Though, Halls model captures important aspects of users' decoding of the processing of recommender systems, a significant difference is how users start conceiving themselves as part of the technical infrastructure, thus becoming co-responsible for the content they are served.

Individual Level-evaluations: Personal Relevance and NRSs

The guiding idea of NRSs is to exploit users' behavioral traces to estimate personal interests and customize news exposure accordingly. Ideally, the match between news exposure and the user's previous reading history or the history of other users with similar preferences would reduce the information overload and enhance the "relevance" of the news feed for the individual user. Following this line of thinking, the workshops were designed to elicit participants' news-reading preferences through observing their navigation on the news site and making them reflect on their choices. This provided rich information about how users assign relevance to content exposed to them and how they sometimes opposed the relevance encoded by the media organizations in the recommender system in the form of "something for you".

Across the individual interviews and group discussions, we found predominantly positive perceptions of the potential recommending news content based on prior behaviors. The benefits described by participants included promoting a more efficient reading experience, where users would "spend less time looking for an article"(W2, P3), higher ranking of niche content, which might not be relevant for the audience as a whole, and enjoying more connected experiences that "affect me to consume more" (R7, individual interview). In addition, *fit with personal interest* and *news relevance* appeared as most frequently used categories to describe navigation on the site and evaluate the utility of the presented articles, confirming that personal levels of taste and preference are key factors in guiding participants' news use and assessment. These quotes illustrate a preferred reading of NRSs in our data: that the intention behind NRSs, namely to personalize news exposure, is perceived as useful for the individual and an asset for reader engagement, as long as the articles suggested fitted the "relevant for me" framework.

Computing personal relevance based on implicit behavioral traces assumes that news interests remain relatively stable over time. Observing and talking to participants about their micro-interactions on the platform shows not only that "personal relevance" varies across individuals, but also that it is affected by a number of contextual factors. R15 exemplifies a common case of how personal interest guides use, but is difficult to capture in its entirety:

> R15 visits EB because he enjoys their sports coverage; he is especially interested in Formula 1 racing. He likes the up-to-the-minute results, the column written by a former Danish F1 driver, and the comments made by other users. When he visits the site, he also gets a "quick news update on what's happening in the world", highlighting the fact that the format and style afford a quick and easy-to-read experience. Moreover, when he is scrolling the interface, he assesses to what extent far headlines match his topics of interest, ignoring topics he is disinterested in, such as gossip and entertainment. For him, personalized recommendations can make his reading experience more effective by presenting "this stuff about Formula 1 which I care about". However, although he deems entertainment as a "less heavy form of news", he still occasionally clicks on an entertainment article if it arouses his curiosity, but only when he's not in his office at work.

R15 - like the majority of users - expressed an interest in a limited part of the publisher's content. For him it is sports, specifically Formula 1, whereas for others it might be political news and commentaries, entertainment, or erotic content.[1] However, there are various levels of interest. For instance, R24 described her interest in sports and football, but

found the recommendations exposed to her as "way off [..]these are poor sports recommendations [..] I am not a big FCK fan, so I do not want to be part of that". In other words, while being broadly interested in sports, she dislikes the local football club, FCK, and is annoyed by recommendations regarding this specific club. This suggests that users´ experience of NRSs depends very much on getting the personalized recommendations right. It also reveals one of the challenges of NRSs, namely adequately understanding personal interest based on prior clicks registered by the system. According to the participants relevance might relate to topicality, tone of the article, or the viewpoint represented. However, it may also relate to matters outside the news text. For example, R26, views personal relevance in terms of the content's proximity to her personal life. Concretely, R26 consistently assesses articles based on the content's potential impact on her life, favoring content about traffic accidents or consumer product news over foreign affairs. Moreover, as R15 describes the assessment of a news item as relevant is not only determined by personal interest but also by contextual factors. Resonating with this perspective, participants describe how their use varies depending on whether they are commuting, checking the news at work, or reading during weekends at home. In this sense, attributing relevance to a news item seems to also depend on other competing agendas in the moment.

These insights remind us that engagement measures like clicks, reading time and scroll depth are vulnerable proxies for the more complex concept of personal relevance, which is only partially determined by interests that remain stable over time and can be captured by looking at a history of interaction. Personal relevance, instead, is affected by situational factors that may evolve over time (e.g., through people entering new life situations) and may be impacted by changing landscapes of competing agendas.

Organizational-level Evaluations: NRS against Editorial and Business Model

When introduced on legacy media platforms like EB, recommender systems are not implemented on a blank canvas. EB has a long history in the Danish media landscape. Hence, participants were familiar with the qualities of their coverage in relation to other Danish media, their format and style, and their business model. These preconceptions can make it difficult to decide whether participants are evaluating the news publisher or the recommender system. Our participants' pre-existing knowledge of and expectations about the media organization's content, together with their awareness of the publisher's historic role in the Danish media ecology, play an important part in determining how NRSs were experienced and evaluated.

The participants described EB's role in the Danish media landscape as a confrontational tabloid media outlet, presenting a diverse range of hard and soft news in an easy-to-read and sensationalized format. The site is designed as a mobile-first news site with moving images and large forward-referencing headlines, aimed at optimizing the probability of users clicking on them (Blom and Hansen 2015). The participants were regular users of the news site, and hence familiar with its format and business model, reflected in their immediacy in distinguishing between the free articles and the so-called EB + articles, hidden behind a paywall. In addition, participants were aware of the frequent use of clickbait headlines and the financial incentives that lay behind them.

Several of the users mentioned clickbait explicitly; some argued that they actively avoid clicking this type of article, whereas others, like R22, admit that they do click on them sometimes: "It is probably because I'd think what a peculiar headline. That type of clickbait works on me" (R22). As other participants describe, the challenge of clickbait is that the headlines withhold central information about what the article is about, resulting in participants "not knowing what's really is going on [in the article]" (R28). This is of course not specific to EB, but it has further implication when put into a NRS context. Click-based business models have two consequences for NRSs when seen from the user perspective. First, if the baiting is effective, it disturbs the connection between personal relevance and behavioral measures (which we addressed in the previous section). If users find it difficult to understand what the article is about, they refrain from clicking although the article could fit their personal relevance, and in turn this might obstruct the NRS from adapting to this personal relevance. Conversely, if users click on the article and find it has no relevance, they will get offered more content with no personal relevance to them. The implication of clickbait in NRS' context, according to our analysis, is that it makes users skeptical about the reasons behind the implementation of such systems. Along such lines, some participants voiced concerns about the recommendations being produced just to make them click more rather than to improving their news reading experience. The participants also expressed concerns about the publisher using the recommenders to push their commercial and editorial agendas. For instance, one participant noted:

> I have noticed that in this "selected for you", Joan Ørting is always there" (R19). When exposed to four recommendations for housing prices, R2 said: "I just become more critical when I can see four [recommendations] for houses coming up. I start feeling there's an agenda by the news media pushing these stories at me. [..] That's a red flag to me.

In these examples, participants decode the recommendation presented to them in relation to the particular business model and editorial profile associated with the publisher.

At the same time, the tabloid profile of EB makes personalization of news less problematic in the eyes of some participants, because its use and reading is perceived as less serious. As R2 says: "Well, if the serious media were to use the same algorithms, I'd be more nervous not being exposed to other stuff than what I'd already clicked because then I'd never learn anything new." In other words, many participants are concerned about NRS creating algorithmically induced filter bubbles (Pariser 2011), but also recognize that they are using the site for "less" serious activities, such as seeking updates on sports events or reading about celebrities. On a constructive note, participants in workshop 5 discussed the idea that too much personalization could make the site "uninteresting" and "dominating to the consumer", and mentioned that the kind of editorial curation they generally favor enables them to "get a broader overview of what's going on right now" and is typically followed by recommendations of content supporting their niche interests:

> I'd say that recommendations are usually more about the softer stuff and come after I have broadly got myself up to date with the more serious news stories. Then I get recommendations of consumer stuff or you know, something more ordinary … something with less news value.

These insights suggest that recommendations are evaluated in the light of the media organization implementing them, the positioning of the recommenders in the news flow, and the type of content that is recommended.

Societal-level Evaluations: NRSs through the Broader Lens of Algorithmic Filtering

So far, our empirical work has been used to elicit the ways in which personalized recommendations are experienced and evaluated in relation to personal relevance and the media's editorial profile and business model. Findings suggest that users interpret and value recommendations in relation to their preferences, the media's format and role, and the context they are situated in at the time of use. A fundamental change in the introduction of personalized recommendations is that users become active in shaping their own news curation, something which was previously conceived of solely as editorial domain. This change in agency seems to indicate a meta-layer of decoding, where news users reflect on and monitor the representation of themselves as entities in the broader eco-system of algorithmic filtering. However, this reflexive process is the result of users only partially understanding how the systems function, based on their conception of their own news use and pre-conceptions about algorithmic curation from other similar systems, such as social media.

Personalized news curation is new for Danish news readers. Therefore, in the interviews and group discussions, participants expressed some uncertainty regarding how they imagined recommender systems to function and their expectations of the quality of the output. However, given their experiences of personalization from other digital platforms, the vast majority of participants expressed a broad understanding of NRSs as systems that derive content preferences based on their history of interaction. This became especially clear when the recommendations were imprecise and matched participants preferences poorly. For example, one of the visualizations presented to the participants was erroneous and only showed automatically generated articles about house prices (See Figure 3 for reference). Some participants recognized the error in the system and reacted with annoyance, "as I'm not selling my house, I don't care about that" (participant W1). For others, the inaccurate recommendations stimulated reflections about whether their behavior was similar to people interested in house prices, or whether they "[..] unconsciously clicked something that triggers these offers" (participant W1). In addition, participants like R19 speculated about the physical proximity of the houses recommended:

> I've noticed these apartments and houses, and I'm thinking that such a system must be responding like that because you've done this or that. I can't completely deny that … hmm it's not too long ago one of our neighbors sold their house

she moves on to identify that one of the articles concerns property locations in close physical proximity to her home, whereas the remaining recommendations were not.

Corresponding with the idea of algorithmic imaginaries (Bucher 2017) recommendations are made by systems with internal technical and commercial logics concealed from users, resulting in users' speculation about what data is included in the systems (e.g., geolocation), how their behavior matches them with the selected items, and whether the systems are biased by commercial interests. In attempting to make sense

Figure 3. Example of an error in recommendations occurring during the workshop. The headlines (from left to right) include "Price is increased significantly for house sold at Tofteåsvej", "Appartment at Rosenvængets Sideallé sold after a fierce price increase", "House on Rolighedsvej sold after major price reduction", and "Expensive trade with house on Linde Allé".

of this incomplete information, participants draw on two domains of reference, which news recommender systems are situated in between: the first is their knowledge about news media and the business models embedded in them, inspiring them to think that algorithms are pushing content based on an editorial agenda. For example, in the first workshop with adult (over 65-year-old) men, the NRSs were confused with more traditional modes of segmentation. The second, and more prevalent, domain of reference consists of digital platforms and social media sites, such as Facebook, Instagram, YouTube, and TikTok, where participants are familiar with the experience of unconsciously clicking something that results in a stream of content that they are only vaguely interested in. While we saw that they tend to decode personalized news in a dominant or preferred mode on the individual level ("this news fits my needs") (Lomborg and Kapsch 2020), we see contrasting positions emerging among participants when they discuss NRSs in terms of collective concerns. Thus, we see that the three levels that we have established in this article are indeed overlapping and interlinked. The connection to social media was a frequent point of reference in the group discussion in W2 involving young readers. The group discussed the democratic implications of news recommender systems in the context of "filter bubbles" and "echo chambers", agreeing that personalized news curation based on clicks and reading patterns would result in a narrow selection of content, confirming participants' interests and viewpoints similarly to Instagram and TikTok. The conversation continued, and one participant illustrated how he experienced that clicking on one article had severe consequences on his recommendations:

> Now I'll just say this frankly [..] I clicked on one article about a study from Norway about homosexual men in long-term relationships with women. I am 100% heterosexual [..] and I found the article interesting because it seems that men in 2023 are still afraid of labeling themselves as homosexual. It [the article] was in the section for "sex and society" and right

> after, I was recommended "This is how much porn actors get paid" and "here is a hot woman". All this just appears, and it becomes kind of awkward to explain (in the interview situation). I don't know why all these nude images appear, but I clicked on one article and for several days I was only recommended content like "Look at her, she's not wearing any clothes. (Participant, Group 2)

The examples presented highlight that while users evaluate the content in relation to their interests and preferences, they also reflect upon how NRSs profile them and associate them with other users via their clicking pattern. In this sense, they also consider the implications that NRSs might have on their personal news exposure. Interestingly, participants rather blamed themselves individually rather than the NRS's for imprecision or error, in the recommendation, indirectly adopting the role of a negotiating partner or co-creator of their own news curation.

Concluding Discussion

In this article, we have analyzed NRSs from the perspective of news users, exploring how they experience and evaluate personalized news recommendations. Distinguishing our research from past scholarship on algorithmic imaginaries (Bucher 2017; Swart 2021; Ytre-Arne and Moe 2021), our analysis draws on an experimental workshop design where users were exposed to personalized recommendations based on their actual use of a news site. The realistic and tangible starting point supports the understanding of how users experience and evaluate NRSs as individuals and as members of the public, bridging between audience-centered, normative democratic, and utilitarian knowledges about news recommender systems.

We find both in the individual interviews and the focus groups that users are aware of the system logics utilized by NRSs and even respond to them in the way they select, experience and evaluate the recommended content offered to them. The strategy of making NRSs tangible provides insights that are otherwise tacit in the moment of use (Polanyi 2009), such as the users' interpretations of NRSs in relation to their perception of personal relevance, knowledge of the editorial and business profile, and thoughts about broader implications of datafication and personalization in society. With this approach our study attests to the value of taking a user perspective seriously as part of building responsible AI systems that can effectively add value and enrich users' experiences. The three main findings from this study pave the way for future theoretical and empirical work on users' relationships with personalized news recommendations.

First, we have demonstrated that participants evaluated the personalized news recommendations with reference to the relevance for them as individuals. As the individual interviews showed, personal relevance is not simply a matter of long-term preferences for specific topics or content categories. Instead, relevance can be determined by the proximity of events or places to one's personal life, the context of news use, and the competing societal agendas at play in that moment. This finding confirms that utility remains an indicator of quality in the evaluation of news recommender systems (Stray et al. 2024), where users "feel seen" when the system suggests content meeting their interests and experience disappointment or annoyance when they feel the system misreads their preferences (Ruckenstein and Granroth 2020). The prevalence of personal relevance as an evaluation criterion also indicates that users often have high - and at times unrealistic - expectations

that NRSs will be able to accurately identify and reflect their personal interests. Arguably, this finding is inflated by the methodological approach of this study, in which participants detail how and why articles are relevant for them, but still suggestive for in-depth examinations of the relationship between NRSs and users' expectations of the news.

Second, our study shows that users experience and evaluate news recommendations with reference to the editorial format and profile of the specific media site adopting the NRS. Despite the centrality of EB in the Danish media environment (Schrøder, Blach-Ørsten, and Eberholst 2023), all participants in the study considered it only a small part of their media repertoire. EB provides their users with an overview of current societal events in concise formats, but the dominant use described by participants relates to softer forms, such as getting updates on sport results and reading about celebrity controversies. Participants also distinguished intuitively between personal niche interests, where they were more willing to accept personalization, and articles or news media which had broader public appeal and societal relevance. Going into detail about how users distinguish between personal and public relevance is beyond the scope of this article, but the findings demonstrate that participants' assessments of quality are contextual and should be understood in relation to structures of legitimacy built into the editorial profile of the news media organizations and to the inbuilt knowledge users have about the content profile of the specific publisher. On a more critical note, as with other news media, EB's website is optimized for clicking (Petre 2021), which influences users' interactions and experiences on the site. Hence, as our empirical interviews show, a click is not necessarily a sign of preference but could also have been the result of misunderstanding a deliberately vague or misleading headline. This challenges the assumption that NRSs could form part of a move away from click-based to subscription-based revenue models by enhancing relevance and consumer loyalty (Bodó 2019). On the contrary, our study highlights how users' interactions and evaluations are shaped by the design and formatting of the news site, which, in turn, feeds into the data foundation for future recommendations.

Third, our participants evaluate NRSs by drawing on their own experience of news and digital platforms in general. As they are familiar with the algorithmic curation and filtering on social media platforms, participants are concerned about the possibility of recommender systems making their news experiences less diverse or leading them to self-confirming information environments. The democratic risk is, that the recommenders will lead to users finding themselves in specific news bubbles, restricting the possibilities of engaging in broader public debate or deliberation beyond the user's own personal sphere of interest. This might have more long-term democratic consequences, which are hard to see in isolated studies such as this one. In situations where recommendations are erroneous or imprecise, participants tended to claim responsibility for the recommendations, reflecting about their clicking history, demographic characteristics or other personal information they suspect has been included in the data foundation. This does not confirm whether participants are algorithmically lured into filter bubbles (Pariser 2011) but instead represents a shift in users' perception of their role on a news site not only as participants who can shape their own news experience, but also as actors who are co-responsible for the content they are exposed to.

The outlined dimensions mirror Hall's (1973) model of decoding with reference to dominant societal discourses, in our case about algorithmic personalization and news

media economy. Although our study includes diverse demographic groups, the size is not sufficient to make direct comparisons. Our results rather illustrate commonalties in the dimensions of which recommendations are decoded, but the weighing of these are likely to vary across groups. The major difference to Hall's model, however, relates to users' knowledge about the consequences of their interaction with NRSs. This confirms the idea of communication as an iterative construction of meaning while, simultaneously, blurring traditional division of labor between encoders and decoders in the communication process. Grounded in Hall's theory of communication, further empirical work is required to compare how diverse societal groups weight the individual, organizational, and societal implications of news recommendations, as well as how symmetry between encoding and decoding can be achieved - and whether it should be a goal at all – in the dynamic environment constituted by personalized curation.

Importantly, our findings contribute to a broader understanding of user agency in algorithmic environments, as this shift in the role of responsibility for curation of content is not only present on news sites, but essentially all sites using personalized recommendations. As users might "get stuck" with little possibility of opting out and the sensemaking of the recommendations is as complex as shown in this article, this also means that user participation should be seen in a more cautious light. In the case of NRS the responsibility for the future legitimacy of the press should be taken into consideration as a part of the discussion of NRS, as the temptation for news providers to prioritize individual relevance over societal relevance is high, especially in times of struggling financial and downwards spiraling advertising markets. Similarly to Steensen et al. argued (2020), our findings can be seen as underlining the argument *against* user engagement, in this case via NRS, as the models and predictions are currently not able to take into account the technical-behavioral, emotional, normative, and spatiotemporal dimensions of news engagement.

These blurring boundaries in the communicative process between news media and news users might have democratic consequences beyond the concerns of interest-based or politically based filter bubbles, as it questions, where the responsibility for the encoding of content resides in the communicative process involving the press as a democratic institution, supposedly informing citizens of issues beyond their own personal interests as consumers. Previously, journalists and editors had responsibility of directing the flow of news to users, aligned with both commercial strategies but also more democratic ideals of "informing publics" (Hartley, Kirk Sørensen, and Mathieu 2023) but with personalized recommender systems this task of "directing the flow of information" is increasingly delegated to machine learning models. Though, recommender systems might offer users a path to steer or "game" the flow of information (Lomborg and Kapsch 2020), our results indicate that user also begin taking the blame for the content, which is recommended to them, but without the possibility of knowing how the content was recommended to them and with their clicks or non-clicks as the only way of resisting or opposing how they are perceived by the machine learning models behind the recommendations they receive.

In summary, research with news users offers an important supplement to existing approaches for understanding and building responsible and human-centered AI systems in news environments. Involving users does not only help to reveal whether and how systems make news experiences more satisfying but also brings up critical questions regarding how personal relevance is operationalized, how users make sense of their experiences, and how NRSs impact users' roles and relationships with news media. Such

critical perspectives are important in the development of AI systems which are not merely responsible, but also meaningful for their users. Future research should investigate how users' experiences are shaped over time and how relationships with news media are transformed as NRSs and other new technologies are implemented. Generative AI is increasingly being used to produce both journalistic content and NRSs, adding further complexity to the relationship between news media and news users. While empirical research like the study presented here provides important knowledge about potential benefits and pitfalls, the rapid developments we see in AI technology and the increased use of NRSs for news distribution also require us to theorize the changing audience-news media relationship that these changes will inevitably bring about.

Note

1. In the context of Ekstra Bladet erotic content represents content similar to the British Tabloid The Sun"s page 3, but also content on celebrities with elements of nudity or sexual references.

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References

Bird, S. E. 2009. "Tabloidization: What is it, and Does it Really Matter?." In *The Changing Faces of Journalism*, edited by B. Zelizer, 40–50. Routledge.

Bird, S. E. 2011. "Seeking the Audience for News: Response, News Talk, and Everyday Practices." In *The Handbook of Media Audiences*, edited by V. Nightingale, 489–508. John Wiley & Sons, Ltd.

Blom, J. N., and K. R. Hansen. 2015. "Click Bait: Forward-Reference as Lure in Online News Headlines." *Journal of Pragmatics* 76:87–100. https://doi.org/10.1016/j.pragma.2014.11.010.

Bodó, B. 2019. "Selling News to Audiences – A Qualitative Inquiry into the Emerging Logics of Algorithmic News Personalization in European Quality." *News Media. Digital Journalism* 7 (8): 1054–1075. https://doi.org/10.1080/21670811.2019.1624185.

Bodó, B., N. Helberger, S. Eskens, and J. Möller. 2019. "Interested in Diversity: The Role of User Attitudes, Algorithmic Feedback Loops, and Policy in News Personalization." *Digital Journalism* 7 (2): 206–229. https://doi.org/10.1080/21670811.2018.1521292.

Bruns, A. 2019. *Are Filter Bubbles Real?*. Cambridge, UK: Polity Press.

Bucher, T. 2017. "The Algorithmic Imaginary: Exploring the Ordinary Affects of Facebook Algorithms." *Information, Communication & Society* 20 (1): 30–44.

Cools, H., B. V. Gorp, and M. Opgenhaffen. 2021. "When Algorithms Recommend What's New(s): New Dynamics of Decision-Making and Autonomy in Newsgathering." *Media and Communication* 9 (4): 198–207. https://doi.org/10.17645/mac.v9i4.4173.

Corbin, J. M., and A. Strauss. 1990. "Grounded Theory Research: Procedures, Canons, and Evaluative Criteria." *Qualitative Sociology* 13 (1): 3–21.

Costera Meijer, I. 2020. "Understanding the Audience Turn in Journalism: From Quality Discourse to Innovation Discourse as Anchoring Practices 1995–2020." *Journalism Studies* 21 (16): 2326–2342. https://doi.org/10.1080/1461670X.2020.1847681.

de Bruin, K., R. Vliegenthart, S. Kruikemeier, and Y. de Haan. 2024. "Who Are They? Different Types of News Avoiders Based on Motives, Values and Personality Traits." *Journalism Studies* 0 (0): 1–19. https://doi.org/10.1080/1461670X.2024.2321537.

Edgerly, S. 2022. "Audience Sensemaking: A Mapping Approach." *Digital Journalism* 10 (1): 165–187. https://doi.org/10.1080/21670811.2021.1931388.

Einarsson, Á. M., R. Helles, and S. Lomborg. 2025. "Algorithmic Agenda-Setting: The Subtle Effects of News Recommender Systems on Political Agendas in the Danish 2022 General Election." *Information, Communication & Society* 28 (2): 218–238. https://doi.org/10.1080/1369118X.2024.2334411.

Groot Kormelink, T., and I. Costera Meijer. 2019. "Material and Sensory Dimensions of Everyday News Use." *Media, Culture & Society* 41 (5): 637–653. https://doi.org/10.1177/0163443718810910.

Haim, M., A. Graefe, and H.-B. Brosius. 2018. "Burst of the Filter Bubble?: Effects of Personalization on the Diversity of Google News." *Digital Journalism* 6 (3): 330–343. https://doi.org/10.1080/21670811.2017.1338145.

Hall, S. 1973. *Encoding and Decoding in the Television Discourse*. Birmingham, UK: Centre for Contemporary Cultural Studies, University of Birmingham.

Harambam, J., D. Bountouridis, M. Makhortykh, and J. van Hoboken. 2019. "Designing for the Better by Taking Users into Account: A Qualitative Evaluation of User Control Mechanisms in (News) Recommender Systems." Proceedings of the 13th ACM Conference on Recommender Systems: 69–77. https://doi.org/10.1145/3298689.3347014.

Hartley, J. M., J. Kirk Sørensen, and D. Mathieu. 2023. *DataPublics: The Construction of Publics in Datafied Democracies*. Bristol, UK: Bristol University Press.

Helberger, N. 2019. "On the Democratic Role of News Recommenders." *Digital Journalism* 7 (8): 993–1012. https://doi.org/10.1080/21670811.2019.1623700.

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

Hindman, M. 2018. "The Internet Trap: How the Digital Economy Builds Monopolies and Undermines Democracy." In *The Internet Trap*. Princeton: Princeton University Press.

Jensen, K. B., and R. Helles. 2017. "Speaking into the System: Social Media and Many-to-one Communication." *European Journal of Communication* 32 (1): 16–25. https://doi.org/10.1177/0267323116682805.

Kammer, A. 2023. "Spaces for Datafication: How Datafication Transforms Media Industries." In *Digital Disruption and Media Transformation: How Technological Innovation Shapes the Future of Communication*, edited by A. Godulla and S. Böhm, 133–141. Cham, Switzerland: Springer International Publishing.

Karimi, M., D. Jannach, and M. Jugovac. 2018. "News Recommender Systems – Survey and Roads Ahead." *Information Processing & Management* 54 (6): 1203–1227. https://doi.org/10.1016/j.ipm.2018.04.008.

Lomborg, S., and P. H. Kapsch. 2020. "Decoding Algorithms." *Media, Culture & Society* 42 (5): 745–761. https://doi.org/10.1177/0163443719855301.

Lomborg, S., A. Kaun, and S. Scott Hansen. 2023. "Automated Decision-making: Toward a People-centred Approach." *Sociology Compass* 17 (8): e13097. https://doi.org/10.1111/soc4.13097.

Meijer, I. C., and T. G. Kormelink. 2020. *Changing News Use: Unchanged News Experiences?* Oxford: Routledge.

Moe, H., and B. Ytre-Arne. 2022. "The Democratic Significance of Everyday News Use: Using Diaries to Understand Public Connection over Time and beyond Journalism." *Digital Journalism* 10 (1): 43–61. https://doi.org/10.1080/21670811.2020.1850308.

Möller, J., D. Trilling, N. Helberger, and B. van Es. 2018. "Do not Blame it on the Algorithm: An Empirical Assessment of Multiple Recommender Systems and their Impact on Content Diversity." *Information, Communication & Society* 21 (7): 959–977. https://doi.org/10.1080/1369118X.2018.1444076.

Møller, L. A. 2024. "Designing Algorithmic Editors How Newspapers Embed and Encode Journalistic Values into News Recommender Systems." *Digital Journalism* 12 (7): 1–19. https://doi.org/10.1080/21670811.2023.2215832.

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

Nærland, T. U. 2020. "From Pleasure to Politics: Five Functions of Watching TV-series for Public Connection." *European Journal of Communication* 35 (2): 93–107. https://doi.org/10.1177/0267323119894481.

Örnebring, H., and E. Hellekant Rowe. 2022. "The Media Day, Revisited: Rhythm, Place and Hyperlocal Information Environments." *Digital Journalism* 10 (1): 23–42. https://doi.org/10.1080/21670811.2021.1884988.

Paliouras, G., A. Mouzakidis, V. Moustakas, and C. Skourlas. 2008. "PNS: A Personalized News Aggregator on the Web." In *Intelligent Interactive Systems in Knowledge-Based Environments*, edited by M. Virvou and L. C. Jain, 175–197. Berlin: Springer.

Pariser, E. 2011. *The Filter Bubble: How the New Personalized Web is Changing What We Read and How We Think*. New York: Penguin.

Peters, C., K. C. Schrøder, J. Lehaff, and J. Vulpius. 2022. "News as they Know it: Young Adults' Information Repertoires in the Digital Media Landscape." *Digital Journalism* 10 (1): 62–86.

Petre, C. 2021. *All the News that's Fit to Click: How Metrics are Transforming the Work of Journalists*. Princeton: Princeton University Press.

Picone, I., and R. Vandenplas. 2022. "Windows to the World: Imagining Flemish News Audiences and Their Views on Society through the Lens of News Repertoires." *Digital Journalism* 10 (1): 87–108. https://doi.org/10.1080/21670811.2021.1972323.

Polanyi, M. 2009. *The Tacit Dimension*. Chicago: University of Chicago Press.

Raza, S., and C. Ding. 2022. "News Recommender System: A Review of Recent Progress, Challenges, and Opportunities." *Artificial Intelligence Review* 55 (1): 749–800. https://doi.org/10.1007/s10462-021-10043-x.

Ruckenstein, M., and J. Granroth. 2020. "Algorithms, Advertising and the Intimacy of Surveillance." *Journal of Cultural Economy* 13 (1): 12–24. https://doi.org/10.1080/17530350.2019.1574866.

Schjøtt Hansen, A., and J. M. Hartley. 2021. "Designing What's News: An Ethnography of a Personalization Algorithm and the Data-Driven (Re)Assembling of the News." *Digital Journalism 0*(0):1–19. https://doi.org/10.1080/21670811.2021.1988861.

Schrøder, K., M. Blach-Ørsten, and M. K. Eberholst. 2023. "Danskernes brug af nyhedsmedier 2023. In *Danskernes brug af nyhedsmedier 2023* (Rapport Nos. 978-87-973514-3–7). Center for Nyhedsforskning, Roskilde Universitet. https://doi.org/10.5281/zenodo.7956294.

Shin, D. 2020. "How do Users Interact with Algorithm Recommender Systems? The Interaction of Users, Algorithms, and performance." *Computers in Human Behavior* 109:106344. https://doi.org/10.1016/j.chb.2020.106344.

Shin, D., and Y. J. Park. 2019. "Role of fairness, accountability, and transparency in algorithmic affordance." *Computers in Human Behavior* 98:277–284. https://doi.org/10.1016/j.chb.2019.04.019.

Steensen, S., R. Ferrer-Conill, and C. Peters. 2020. "Against a." *Theory of Audience Engagement with News. Journalism Studies* 21 (12): 1662–1680. https://doi.org/10.1080/1461670X.2020.1788414.

Stray, J., A. Halevy, P. Assar, D. Hadfield-Menell, C. Boutilier, A. Ashar, C. Bakalar, et al. 2024. "Building Human Values into Recommender Systems: An Interdisciplinary Synthesis." *ACM Transactions on Recommender Systems* 2 (3): 1–57. https://doi.org/10.1145/3632297.

Sunstein, C. R. 2001. *Republic.com*. Princeton: Princeton University Press.

Swart, J. 2021. "Experiencing Algorithms: How Young People Understand, Feel About, and Engage With Algorithmic News Selection on Social Media." *Social Media + Society* 7 (2): 20563051211008828. https://doi.org/10.1177/20563051211008828.

Swart, J., T. Groot Kormelink, I. Costera Meijer, and M. Broersma. 2022. "Advancing a Radical Audience Turn in Journalism." *Fundamental Dilemmas for Journalism Studies. Digital Journalism* 10 (1): 8–22. https://doi.org/10.1080/21670811.2021.2024764.

Tandoc, E. C. 2019. *Analyzing Analytics: Disrupting Journalism One Click at a Time*. London: Routledge.

Van den Bogaert, L., D. Geerts, and J. Harambam. 2022. "Putting a Human Face on the Algorithm: Co-Designing Recommender Personae to Democratize News Recommender Systems." *Digital Journalism 0*(0):1–21. https://doi.org/10.1080/21670811.2022.2097101.

Van Zoonen, L. 2005. *Entertaining the Citizen: When Politics and Popular Culture Converge*. Lanham, MD: Rowman & Littlefield.
Vrijenhoek, S., M. Kaya, N. Metoui, J. Möller, D. Odijk, and N. Helberger. 2021. "Recommenders with a Mission: Assessing Diversity in News Recommendations." In *Proceedings of the 2021 Conference on Human Information Interaction and Retrieval*, 173–183. https://doi.org/10.1145/3406522.3446019.
Ytre-Arne, B., and H. Moe. 2021. "Folk Theories of Algorithms: Understanding Digital Irritation." *Media, Culture & Society* 43 (5): 807–824. https://doi.org/10.1177/0163443720972314.

Appendix

Table A1. Coding guide.

	n	Spread
News use in everyday life		
Situation of use: Participants discussing the context of their news reading, including habits, typical physical surroundings, devices used, and the function news reading serves in the situation.	388	23
News relevance: Participants discussing the relevance of news in their everyday life. The code contains both overall discussion of news relevance and concrete assessments of the relevance of exposed news articles. Relevance criteria identified are personal interests, proximity, curiosity, timeliness, and format.	1319	24
Interaction with other sources: Participants discussing the use of other publishers and platforms to seek news in their everyday lives.	135	22
Genre expectations to personalized news media		
Expectations of news media: Participants discussing the expectations they have towards the news genre, including the content, format, and business models associated with the news media.	395	24
Expectations of social media: Participants discussing the expectations they have towards social media and other personalized platforms.	83	18
Appropriateness of personalization in news: Participants discussing what should and should not be personalized in news media.	116	9
Evaluation of news recommender systems		
Awareness of personalization: Instances where participants discuss their awareness of personalization and expectations towards transparency. The code also includes the situations where participants in interview section 2 identify or fail to identify personalization on the news site.	148	24
Imaginaries of processing by recommender systems: Participants discussing how they imagine the recommender systems working, including what is inputted into the systems, and why they think certain articles are recommended to them	159	22
Error: Instances or situations where participants are exposed to imprecise or erroneous recommendations, and how they make sense of the errors and what might have caused them.	66	13
Fit between user preferences and personalized recommendations: Assessments of specific recommendations exposed by the recommender systems. The code includes participants reasoning about which articles they might select and whether the recommendations align with their personal preferences and tastes.	625	24
Format: Instances where participants discuss the formatting of recommendations, including sizing, pictures, and placement on the site.	168	21
Problems and potentials		
Potentials: Participants discussing potential positive impact that personalization can have on their everyday news use, such as efficiency, serendipity and match with personal interests.	71	13
Concerns: Participants discussing potential negative impacts of personalized news recommendations on their everyday news use, such as exposure diversity, autonomy, and democratic consequences.	177	21

Definition of codes and their frequency of occurrence. *n* represents the number of utterances across the interviews and *spread* is the number of interviews the code is identified in.