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Mobile news access, mobile news repertoires, and users' tendency to talk about the news – an experience sampling study on mobile news consumption

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Abstract

Purpose: Over the past three decades, our media ecologies have substantially transformed, changing how people get in touch with the news. These changes have also led to higher variability in news access across users' daily lives. Using the microcosm of mobile news consumption as a proxy for the changes in our general news use, we explore types of mobile news access and mobile news repertoires and their relations to users' tendency to talk about the news. Our exploratory study aims to describe intra- and inter-personal variations in mobile news use. By taking this fine-grained perspective on mobile news use, we provide a more comprehensive assessment than cross-sectional studies, which is valuable to researchers and practitioners in mobile news.

Methodology: We conducted a 14-day experience sampling study among 72 young adult Germans. We received 2,211 filled-in in-situ questionnaires based on three daily alerts, reporting on 560 mobile news situations. We used multi-level latent class analysis to simultaneously assess patterns of mobile news access and mobile news repertoires.

Findings: We uncover five distinct types of mobile news access embedded in four mobile news repertoires. These findings highlight the considerable intra-individual heterogeneity in mobile news use. However, these heterogeneities only scarcely manifest in users' tendency to talk about the news.

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Practical and social value: Our study highlights the importance of acknowledging intra-individual variation when studying news use and its implications. Most importantly, we see that no mobile news repertoire among our sample relies solely on social media-based mobile news access. Researchers and practitioners must acknowledge these heterogeneities when discussing the benefits and perils of social media-based news access.

Keywords: news use; news repertoires; mobile news; mobile media; meta-media; latent class analysis

1 Introduction

Over the past three decades, our media ecologies have undergone a substantial transformation, not at least changing how people get in touch with the news. Online media have increased the amount of news everyone can access in an unprecedented way, making processes of personal news curation (Thorson and Wells 2016) ever more critical. In addition to the amount of news, modes of access have also increased: intermediaries like search engines, news aggregators, or social media have unbundled the news from their traditional formats, providing increased opportunities for additional curation processes such as algorithmic, social, or strategic curation of news (Thorson and Wells 2016).

These tremendous changes must be viewed ambivalently. High hopes for more equality in the access to news and a better-informed electorate as a result (e.g., Benkler 2006) are contrasted with fears of news avoidance (Marcinkowski and Došenović 2020), filter bubbles (Pariser 2011), a news-finds-me perception (Gil de Zúñiga and Diehl 2019), and increasing knowledge gaps (Heiss and Matthes 2019), with recent empirical evidence leaning towards rather pessimistic perspectives (e.g., Gil de Zúñiga and Diehl 2019; Heiss and Matthes 2019).

However, most of the research to date focuses on one specific kind of news access (e.g., news consumption via social media) and the effects thereof, neglecting the fact that users combine several types of news access throughout their daily lives, thereby creating individual media use repertoires (Hasebrink and Domeyer 2012). Or, speaking more methodologically, by focusing on specific kinds of news access and their effects, current research is prone to confound variance stemming from within users' daily lives (intra-personal variance) as the variance between users (inter-personal variance). This, however, limits our ability to draw robust inferences about the effects of specific ways of accessing the news.

We need to analyze access to news to disentangle these variances within users' daily lives from differences between users. Conceptualizing mobile media as meta-

media (Humphreys et al. 2018), mobile media constitute an excellent microcosm to study this intra-personal variability in news access. They accompany users throughout their daily lives (Ling 2012), providing permanent access to news in various ways, from direct access to news websites or apps over intermediaries such as news aggregators to social media (Westlund 2015).

By exploring different types of mobile news access in users' daily lives and aggregating those to mobile news repertoires, we provide a more comprehensive basis for investigating different styles and types of (mobile) news use.

In addition, this study concentrates on one primary effect of media use: communication – or, as Weimann and Brosius (2016, p. 32) put it, the “notion that the main effect of communication is communication.” In the 1980s, Chaffee (1982) noted that follow-up communication, i.e., communication occurring as an effect of media use, is the most critical effect of media use. Several studies have provided empirical evidence (Gehrau and Goertz 2010; Vaccari and Valeriani 2018). This relevance of communication as main effect of communication is also reflected in many studies on the motivations of news consumption showing social motives to be highly influential (e.g., Lou et al. 2021; Teo 2018). We, therefore, also investigate the relationship between mobile news repertoires and follow-up communication.

To sum up, this exploratory study investigates *(1) which types of mobile news access can be identified based on type of platform and reception mode, (2) which mobile news repertoires can be uncovered based on the previously identified types of mobile news access, and (3) how are mobile news repertoires and users' characteristics (news-finds-me perception, general tendency to talk about the news) related to users' tendency to talk about the news?*

2 Theoretical background: mobile news consumption

2.1 Inter- and intra-personal variation in news consumption

Across their daily lives, people encounter the news in many different situations. They might wake up in the morning listening to their favorite news podcast and then, throughout the day, check a news website on their phone during a commute, get a chat message referring to a news article, or encounter news items in social media posts. These examples demonstrate that news access, and most importantly mobile news access, varies considerably within one person from one situation in their daily lives to another. Put differently, we can uncover intra-individual variation when studying mobile news access.

At the same time, we also observe differences between people. Some people prefer listening to news podcasts, others heavily rely on news being pushed to them primarily through social media (as captured in the concept of the news-finds-me perception; Gil de Zúñiga and Diehl 2019), and others still enjoy reading news articles in a news app. However, a recent meta-analysis has revealed that the bigger part of the variation in media use resides within the person, not between different users (Schnauber-Stockmann et al. 2023). To gain a more comprehensive understanding of mobile news consumption, we need to acknowledge and study this intra-personal variation in mobile news access, i.e., we need to study inter- and intra-personal variation simultaneously.

2.2 Changes in news access

Media ecologies have changed tremendously during the past decades, transforming former low-choice to high-choice media environments (Van Aelst et al. 2017). Not at least, these changes have also affected news consumption processes. Current news exposure can occur via many communication channels and devices, with users encountering multiple sources and news providers. The underlying mechanisms leading to this situation are manifold and often overlapping. Thorson and Wells (2016) proposed a compelling systematization in their curation framework, differentiating several curation processes influencing and governing current news exposure and use. Without discussing this framework and the different curation processes in detail, we want to draw attention to the fact that these different, simultaneously ongoing curation processes – supposedly – lead to considerable intra-personal heterogeneity in news access in our current media ecologies.

This intra-personal variance in accessing the news is rarely considered by research on news consumption and its effects. Instead, extant research mainly describes and investigates the impact of inter-personal differences (for an exception, see the tradition of media and news repertoires discussed below). To better grasp these current heterogeneous news behaviors and thus provide a solid basis to assess their consequences, we need to look at these intra-personal differences. These intra-personal differences have, of course, already been researched in the age of legacy media (i.e., before the massive diffusion of online media), especially in the tradition of (contextual influences on) media selection processes (e.g., Webster and Wakshlag 1983). However, the rise of mobile media, i.e., ubiquitously usable devices such as the smartphone, has increased the interest in this perspective due to mobile media's inherent nature of being used ubiquitously and across many different situations (Karnowski 2020; for an overview of studies employing this

perspective see Schnauber-Stockmann and Karnowski 2020; Schnauber-Stockmann et al. 2023).

Therefore, rather than studying our overall media ecologies, we will concentrate on mobile media, specifically the smartphone, in this study for two reasons. First, as mentioned above, interest in intra-personal variation in media use has recently increased in the context of mobile media (for news consumption, see, e.g., Struckmann and Karnowski 2016; van Damme et al. 2020). Second, and most importantly, mobile media, such as smartphones, can be conceptualized as meta-media (Jensen 2016). Humphreys and colleagues argue that this results in their individual uses being undetermined, programmable, and configurable by users (2018). An unlimited number of constituent media, such as apps, can be embedded by users into the structure of the meta-medium, leading to individual and constantly changing configurations. For example, users can embed a radio application, access the news via a newspaper website using the smartphone's browser, or use a social media application like Facebook. This individual assemblage of constituent media is constantly and freely (re)configurable by each user. Thus, these meta-media can be seen as a microcosm reflecting the high-choice environment of our broader media ecologies in one device.

We must analyze these constituent media used to analyze intra-personal variation in mobile news access. According to the framework suggested by Humphreys et al. (2018), we should investigate their specific features instead of just asking which constituent media are used. We, therefore, analyze two main features of constituent media. First, because smartphones are multimedia devices, they are open to all reception modes (i.e., reading, listening, and watching). The *reception mode* can thus be seen as one fundamental feature of constituent media worth analyzing. Second, constituent media can be classified by their broader class or *type of platform* (Humphreys et al. 2018), such as social media or news apps, for example. Hence, to assess types of mobile news access, we ask:

RQ1: *Based on reception mode and platform type, which types of mobile news access can be identified?*

2.3 Mobile news repertoires

To provide a more comprehensive basis for assessing possible consequences of media use, we need to focus on inter-personal variation simultaneously. One way to grasp the intra-individual heterogeneity in media use and condense it is through media repertoires, which refer to “relatively stable cross-media patterns of media

practices” (Hasebrink and Hepp 2017, p. 367). However, extant studies on news repertoires mainly rely on cross-sectional surveys and users’ overall assessment of usage frequencies of different platforms (e.g., Oh et al. 2021; Yuan 2011). We argue that such an approach cannot disentangle intra-personal from inter-personal variance in news consumption. Instead, we need to dig deeper and assess repertoires based on users’ actions captured in situ. Ohme et al. (2016) have adopted a similar approach to study exposure to political information, confirming the feasibility of such an approach. Studying (mobile) news use, we concentrate on users’ (mobile) news repertoires as part of their broader media repertoires (Peters and Schröder 2018) and ask:

RQ2: *Which mobile news repertoires can be uncovered based on the previously identified types of mobile news access?*

2.4 Communication as an effect of communication

Expected future interpersonal conversations about news are one of the strongest motives for news consumption and one of its main effects (Gehrau and Goertz 2010). This effect of news use is highly relevant to our democracies. It leads to a stronger sense of and reflection on one’s own opinion (de Boer and Velthuisen 2001) and encourages civic and political involvement (Vaccari and Valeriani 2018). Along with the aforementioned changes in our media ecologies, the possibilities to access news and communicate about them have increased tremendously. News are no longer only a topic of conversation in face-to-face communication (Calabrese and Jenard 2018), but news can also be commented on and distributed on social media or discussed directly on news websites.

Whether people are willing to talk about news depends on personal, content, and context characteristics. In this study, we will focus on personal and contextual factors. Overall, general interpersonal communication motives (e.g., general tendencies to speak) and individual news consumption perceptions (e.g., news-finds-me perception) are important influences on whether people talk about the news (Park and Kaye 2020; Porten-Chee 2017; Ziegele 2016). In addition, the context of news use, such as the medium used to access the news, is also influential. For example, television news is discussed more often than news from the newspaper or radio (Gehrau and Goertz 2010). Considering our case of mobile news use, we assume broad intra-personal variance in specific types of mobile news access (RQ1), condensed in mobile news repertoires (RQ2). To assess the consequences of mobile news repertoires along with users’ characteristics, we therefore ask:

RQ3: *How are mobile news repertoires and users' characteristics (news-finds-me perception, general tendency to talk about the news) related to users' tendency to talk about the news?*

3 Method

To answer these questions, we conducted a mobile experience sampling study (Naab et al. 2019; Schnauber-Stockmann and Karnowski 2020) among young adults in Germany in December 2019, preceded by an online survey. We focused on young adults, i.e., persons between 18 and 30, as this age group is most prone to consuming news online and using mobile devices (Behre et al. 2023).

This methodological approach is an in-situ method based on traditions such as experience sampling (Larson and Csikszentmihalyi 1983) or ecological momentary assessment (Shiffman et al. 2008). In contrast to retrospective self-reports, this method provides advantages concerning the validity and reliability of the measurement (Naab et al. 2019). Collecting situation-level data at randomly chosen points in time, i.e., repeatedly asking people what they do right now or have done in a short time preceding the current situation, gives us a comprehensive picture of users' everyday life mobile news consumption. This methodological approach considerably reduces measurement errors due to recall bias, to which high-frequency short-term media behaviors such as mobile news use are especially prone. In addition, only by collecting data at multiple points across users' everyday lives can we disentangle intra- and inter-personal variation in mobile news use (Naab et al. 2019).

Procedure. Participation in the study was voluntary and unpaid, and participants were guaranteed complete confidentiality regarding the obtained data. We donated a small amount per completed in-situ questionnaire to a non-profit organization as an incentive to participate. The study consisted of two phases. First, participants were invited to an online survey to gather person-level information on socio-demographics and, among others, personal characteristics, like the news-finds-me perception (Gil de Zúñiga and Diehl 2019) and the general tendency to talk about the news.

In the two weeks following the pre-questionnaire, participants received three text messages per day at random times between 7 am and 9 pm, directing them to the in-situ questionnaire, asking about situation-level information. First, we investigated whether participants had consumed news via smartphones during the previous hour. If they had consumed news, we asked about the type of platform used and reception mode (see Section 3.1 Measures). We also asked whether they had talked about the news they had consumed or still intended to do so. Following Kümpel (2019,

p. 159), we defined news in the pre-questionnaire and the daily questionnaire as follows: *By news, we mean communications of public interest that deal with international, national, and regional events. This includes politics, economics, science, sports, culture, and entertainment.*

Sample. Participants were recruited through snowball sampling among German bachelor- and master-level students in media and communication and their friends. We invited 95 participants to take part in this study. Ninety participants took part in the pre-survey (Figure 1). We then sent 3,990 text messages during the two weeks, resulting in 2,403 filled-in in-situ questionnaires. This corresponds to a response rate of 60 %. To clean the data, we removed all participants who had not filled in the pre-questionnaire or did not consume news on their smartphones (Figure 1). By also excluding those participants who answered the daily questionnaires less than 14 times, we obtained a final sample (Figure 1) consisting of 72 participants (age: $M = 24.12$, $SD = 2.10$, 19–28 years, 53 % female, education: 35 % A-levels, 65 % university degree) and 2,211 filled-in in-situ questionnaires ($M = 31.02$, $SD = 8.27$), reporting on 560 mobile news situations.

3.1 Measures

Online survey. In the pre-questionnaire, we assessed users' characteristics. *News-find-me perception* was measured using the following four items (Gil de Zúñiga et al. 2017) on a scale of 1 (= do not agree at all) to 5 (= agree completely): "I rely on my friends to tell me when something important happens in the news," "I feel well informed, even if I don't actively follow the news," "I don't worry about staying up to date because I know the news will find its way to me," and "I rely on receiving news and information based on what my friends link to and follow on social media" ($M = 2.18$, $SD = 0.70$, Cronbach's $\alpha = 0.64$).

Tendency to talk about the news was assessed with four items derived from Friemel's (2013) theoretical considerations, assigning these conversations both an information function (talking about news) and a participation function (discussing news). Furthermore, a distinction was made as to whether the conversation about news occurs online or offline. These considerations led to the four possible courses of action: "Spread news online (e.g., by sharing the message, linking someone under it, or sending the message)," "Discuss news online (e.g., by liking the message, commenting on it, or replying to a comment)," "Tell news to someone in a personal conversation or on the phone," and "Discuss news with someone in a personal conversation or on the phone." The participants were asked to indicate on a scale of 1 (= very rarely) to 5 (= very often) how often they engage in these activities ($M = 2.61$, $SD = 0.60$, Cronbach's $\alpha = 0.61$).

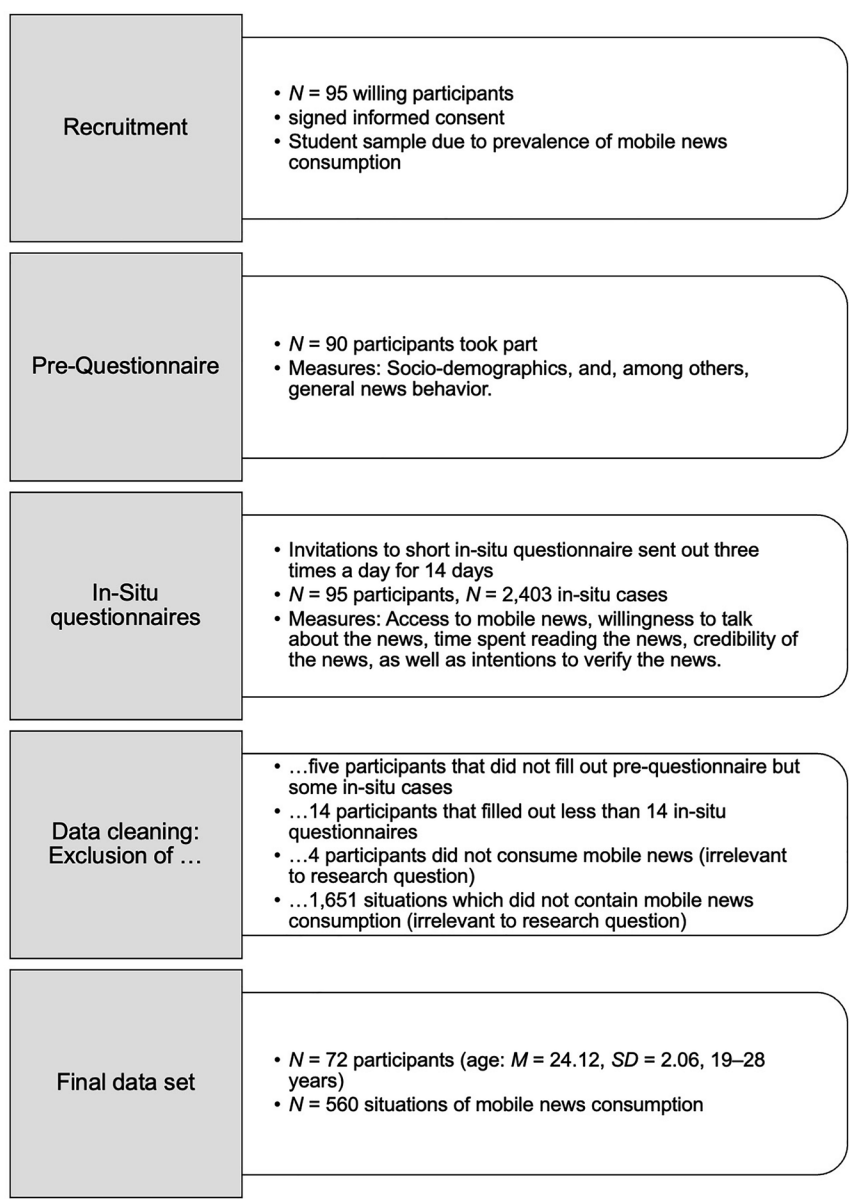


Figure 1: Data collection procedure and sample description.

3.2 MESM study

The in-situ questionnaires focused on participants' mobile news access within the last hour. We asked about the features of apps used for news access and potential interpersonal conversations following news use.

First, the participants were asked to indicate whether they had read, watched, or listened to the news on their smartphone within the previous hour (*reception mode*). If the participants had consumed news several times during that period, they were asked to answer regarding the most recent news use situation.

Second, we asked about the *type of platform used*. Depending on the reception mode participants had selected, they could choose from limited options to keep the in-situ questionnaire as brief as possible. Overall, the types of platforms used included a website via a browser, a news app, a news widget for the smartphone, a social media app, a messenger app, an e-mail, a media library/streaming service, and a web radio/radio app.

We further subdivided social media and websites, as these platforms represent broad categories. When participants chose social media, they were asked to distinguish between Facebook, Instagram, Twitter, YouTube, Snapchat, and others (*type of social media*). For websites, we asked participants to differentiate between news websites and other websites (*type of website*).

Finally, following the operationalization used to assess users' overall tendency to discuss the news (see above), we asked respondents whether they had talked about the news consumed in this situation (*talking about news*) with others or intended to do so (*intention to talk about news*).

3.3 Analytical strategy to assess types of mobile news access and types of mobile news repertoires

Data collection resulted in a hierarchical structure with (multiple) news access situations (560 news access situations) nested in participants (72 participants). Therefore, the need for specific statistical tools that account for non-independent data must be assessed. To simultaneously identify types of mobile news access (Level 1/L1; 560 situations) and types of users' mobile news repertoires (Level 2/L2; 72 participants) (RQ1 & 2), we therefore conducted a multilevel latent class analysis (MLCA; Lukočienė et al. 2010) using Latent GOLD (Magidson and Vermunt 2016).

In its basic form, latent class analysis (LCA) allows the identification of clusters of homogeneous units regarding the clustering variables, assuming the existence of a discrete, unobserved variable with K categories triggering the homogeneity among

the clustered units. LCA further hinges on the assumption of local independence (Lazarsfeld and Henry 1968).

However, as the current data set has a multilevel structure (situations nested in persons), a multilevel latent class analysis (MLCA; Vermunt 2008) must be applied. Following the strategy suggested by Vermunt (2008), we address the multilevel structure of the data set by introducing a group-level discrete latent variable (here: person-level) and allowing the model parameters to vary across latent classes of persons. The basic idea of this approach (i.e., the introduction of a person-level discrete latent variable) is that persons also belong to one of L person-level latent classes with a specific class membership of person j and a specific value of the unobserved variable, that is, a specific person-level latent class l (statistical model see Vermunt 2008, p. 38). These latent classes of persons can vary in the probability that situations of persons belong to the latent class k (i.e., on the situation-level). In the multilevel context, local independence then refers to the independence of situation response patterns of one another, given that person-membership is controlled for (Vermunt 2008).

To identify meaningful lower-level classes while considering the structure of the data, a model is calculated in which situation-level class membership probabilities vary across person-level classes but does not allow the parameters that define the class-specific conditional distributions for the situation-level variables to vary across person-level classes (Vermunt 2008). These calculations return several parameters, namely *latent class probabilities* and *conditional probabilities*. Latent class probabilities describe how classes of the latent variable are distributed. They indicate both the number and relative sizes of the classes. Conditional probabilities indicate the probability that a participant in a given latent class will be at a specific level of the observed variable.

4 Results

4.1 Types of mobile news access (RQ1)

As elaborated above, we conducted an MLCA based on the type of platform and reception mode. Following our operationalization discussed above, this includes the variables reception mode, type of app used, type of social media, and type of website. To identify the number of situation-level and person-level classes, we compared several models following a three-step procedure by Lukočienė et al. (2010, procedure see foot of Table 1). As a general guideline, the solution with the lowest Bayesian information criterion (BIC, based on the number of higher-level cases) is considered the best solution (Lukočienė et al. 2010). This procedure resulted in a solution with

Table 1: Information criteria for cluster solutions.

Model number	Number of situation-level classes	Number of person-level classes	LL	BIC	Npar	CE
1	1	1	−2,188.59	4,458.44	19	0.00
2	2	1	−1,804.46	3,771.43	38	0.00
3	3	1	−1,594.10	3,431.98	57	0.00
4	4	1	−1,430.02	3,185.06	76	0.00
5	5	1	−1,412.91	3,232.10	95	0.00
6	6	1	−1,405.37	3,298.29	114	0.01
7	7	1	−1,397.74	3,364.27	133	0.00
8	8	1	−1,397.19	3,444.43	152	0.00
9	9	1	−1,397.76	3,526.84	171	0.00
10	10	1	−1,392.52	3,597.60	190	0.00
11	4	1	−1,430.02	3,185.06	76	0.00
12	4	2	−1,366.66	3,075.45	80	0.00
13	4	3	−1,346.75	3,052.74	84	0.00
14	4	4	−1,336.04	3,048.43	88	0.00
15	4	5	−1,327.65	3,048.74	92	0.00
16	4	6	−1,321.42	3,053.39	96	0.00
17	4	7	−1,318.47	3,064.60	100	0.00
18	4	8	−1,317.16	3,079.10	104	0.00
19	4	9	−1,316.08	3,094.04	108	0.00
20	4	10	−1,315.07	3,109.12	112	0.00
21	1	4	−2,188.59	4,471.27	22	0.00
22	2	4	−1,744.22	3,676.61	44	0.00
23	3	4	−1,504.92	3,292.10	66	0.00
24	4	4	−1,336.04	3,048.43	88	0.00
25	5	4	−1,284.70	3,039.83	110	0.00
26	6	4	−1,263.58	3,091.68	132	0.01
27	7	4	−1,237.65	3,133.90	154	0.01
28	8	4	−1,220.93	3,194.55	176	0.02
29	9	4	−1,206.71	3,260.20	198	0.05
30	10	4	−1,186.48	3,313.82	220	0.03

Note: 72 participants, 560 situations. LL = log likelihood, BIC = Bayesian information criterion based on the number of person-level cases, Npar = number of parameters, CE = classification error. Procedure to determine optimal model based on Lukošienė et al. (2010). Step 1: Estimation of the number of situation-level classes. Step 2: Estimation of the number of person-level classes with a fixed number of situation-level classes from step 1. Step 3: Redetermination of situation-level classes with a fixed number of person-level classes from step 2. Bayesian information criterion (BIC) is based on the number of person-level cases.

five types of news access on the situation-level and four types of mobile news repertoires on the person-level, which will be described in the following (see Table 1 for model comparisons).

Regarding RQ1, we identified five types that reflect a broad spectrum of mobile news access. These types can be described as follows (see Table 2, class size in percent of the total number of situations in brackets):

Direct app access (41.2 %). This type stands out because it is the most frequent mobile news access. News are primarily read and accessed via a news application or the news widget of users' smartphones. Hence, users are directly exposed to journalistically curated content, so this class is called 'direct app access.' There is also a small probability of accessing news via a messenger app or e-mail.

Listening & watching (16.9 %). This type is characterized by a high probability of listening to or watching news accessed via media-library/streaming-service apps (e.g., Zattoo, Spotify) and specific (web) radio apps.

Social media (textual) (15.6 %). The reception mode of reading characterizes the first of two social media-based types of mobile news access. When belonging to this type, there is a 54 % chance of reading news on Facebook and a 32 % chance of reading news on Twitter.

Social media (visual) (14.0 %). In contrast to the previous type, this social media-based type of mobile news access is characterized by reading and watching. However, what sets this type apart is the high probability of accessing news on Instagram and a more negligible probability of accessing the news via YouTube.

Direct website access (12.3 %). The smallest type of mobile news access is like the first in that it is almost exclusively characterized by reading the news. In contrast to the first type, in this type, news are accessed mainly via a news website (again representing journalistically curated content) and, in some cases, via other websites such as provider home pages.

4.2 Mobile news repertoires (RQ2)

As iterated above, we assume that the prevalence of these types of mobile news access varies within and between users. Multilevel LCA also identified four types of mobile news repertoires (see Table 1), indicating the prevalence of types of mobile news access across different users' daily lives. These mobile news repertoires combine multiple types of mobile news access, with none relying on only one type. In addition, although these mobile news repertoires differ considerably in their combinations of types of mobile news access, all contained at least some amount of direct access to journalistic products (see Table 2, class size in percent of the total number of users in brackets):

Direct news access (34.1 %). *Direct app access* characterizes this repertoire. Hence, users mainly consume content from journalistically curated news applications or news websites.

Table 2: Description of mobile news access types and types of mobile news repertoires based on multilevel latent class analysis.

	Situation-level class 1 Direct app access	Situation-level class 2 Listening & watching	Situation-level class 3 Social media (textual)	Situation-level class 4 Social media (visual)	Situation-level class 5 Direct website access
Relative class size	41.2 %	16.9 %	15.6 %	14.0 %	12.3 %
(Person-level) mobile news repertoires (and relative size of resp. classes)^a					
Direct news access (34.1 %)	75.7 %	8.1 %	1.9 %	1.4 %	12.9 %
Mixed readers (31.0 %)	20.6 %	16.3 %	48.1 %	0.1 %	14.9 %
Visual social media and news apps (21.8 %)	28.3 %	8.8 %	0.1 %	54.1 %	8.8 %
Listening and news apps (13.1 %)	21.9 %	54.8 %	0.1 %	13.0 %	10.3 %
Reception mode^b					
Reading	94.2 %	0.2 %	94.7 %	74.6 %	98.5 %
Watching	5.8 %	23.7 %	5.3 %	25.4 %	1.5 %
Listening	0 %	75.1 %	0 %	0 %	0 %
Missing	0 %	1.1 %	0 %	0 %	0 %
Type of app used					
Website (news or other)	0 %	0 %	0 %	0 %	99.7 %
News app	66.2 %	0.1 %	0.1 %	0.1 %	0.1 %
News widget of smartphone	22.9 %	0 %	0 %	0 %	0 %
Social media	0 %	0.1 %	99.8 %	99.8 %	0.1 %
Messenger app	4.6 %	0 %	0 %	0 %	0 %
E-mail (e.g., newsletter)	5.8 %	0 %	0 %	0 %	0 %
Media library/streaming-service-app	0 %	70.8 %	0 %	0 %	0 %

Table 2: (continued)

	Situation-level class 1 Direct app access	Situation-level class 2 Listening & watching	Situation-level class 3 Social media (textual)	Situation-level class 4 Social media (visual)	Situation-level class 5 Direct website access
Webradio/radio-app	0 %	27.9 %	0 %	0 %	0 %
Missings	0.4 %	1.1 %	0 %	0 %	0 %
Type of social media					
Facebook	0 %	0 %	53.5 %	0 %	0 %
Instagram	0 %	0 %	2.6 %	84.7 %	0 %
Twitter	0 %	0 %	32.0 %	5.4 %	0 %
YouTube	0 %	0 %	0 %	8.5 %	0 %
Snapchat	0 %	0 %	0 %	1.2 %	0 %
Other	0 %	0 %	11.7 %	0 %	0 %
missings	100 %	99.9 %	0.2 %	0.2 %	99.9 %
Type of website					
News website	0 %	0 %	0 %	0 %	83.7 %
Other website	0 %	0.1 %	0.1 %	0.1 %	15.9 %
Missings	100 %	100 %	99.9 %	100 %	0.4 %

Note: 72 participants, 560 situations. Dimensions measured as single selection (categorical). ^aConditional probabilities per group: when belonging to type 1, 75.7 % of news consumption situations are type 1 situations. 34.1 % of participants belong to type 1 (reliance on journalistic curation). ^bConditional probabilities, for example: when belonging to situation class 1, the likelihood of that situation involving accessing the news via reading is 94.2 %.

Mixed readers (31.0 %). Users in the *mixed readers* repertoire show high variability in their mobile news access. The mobile news access types they engage in mostly are *social media (textual)* and – to a lesser degree – *direct app access* and *direct website access*. In contrast, the type of *social media (visual)* is underrepresented in this repertoire.

Visual social media and news apps (21.8 %). This repertoire is characterized by a high probability (54 %) of containing the mobile news access type *social media (visual)*, supplemented by *direct app access*.

Listening and news apps (13.1 %). Participants showing this news repertoire constitute the smallest class. This repertoire also contains a mix of mobile news access types, with the highest likelihood of *listening & watching* (54.8 %). *Social media (textual)* is not part of this repertoire.

4.3 Tendency to talk about the news used on mobile media (RQ3)

RQ3 asked which mobile news repertoires go along with talking about the consumed news. We conducted two multiple linear regressions to answer this research question (see Table 3). Dependent variables were the actual behavior of talking about the news and the intention to talk about the news. Both variables were created by aggregating the binary situation variables via the mean, thus indicating the overall frequency with which a participant talked or intended to talk about the news. In 18.2

Table 3: Explaining frequency and intention to talk about the news.

	Model 1: Agg. frequency to talk about the news	Model 2: Aggr. intention to talk about the news
Intercept	−0.17 (0.14)	0.18 (0.17)
NFM perception	0.05 (0.04)	−0.07 (0.04) ^{n.s.} ($p = 0.087$)
Tendency to talk	0.11 (0.04) ^a	0.06 (0.05)
Gender	−0.11 (0.05) ^b	−0.05 (0.06)
Direct news access	−0.00 (0.08)	0.13 (0.09)
Visual social media and news apps	−0.04 (0.08)	0.25 (0.09) ^a
Listening and news apps	0.02 (0.08)	0.02 (0.09)
R^2	0.19	0.25
Adj. R^2	0.11	0.17
F (df)	2.33 (6, 58), $p = 0.044$	3.14 (6, 57), $p = 0.010$

Note: $N = 72$. Unstandardized regression coefficients reported, standard error in brackets. Class 2 used as reference category, ^a $p < 0.01$; ^b $p < 0.05$.

and 27.1 % of the situations, the participants talked about or intended to talk about the news they had just consumed. We entered the conditional probabilities of the person-level repertoire classes as predictors. We used class 2, the class with the lowest frequency of both dependent variables, as reference category. In addition, we controlled for person-level characteristics (gender, news-finds-me perception, tendency to talk about the news).

First, looking at the behavioral variable of *talking about the news*, we can see that only the general tendency to talk and gender emerged as significant predictors. The higher the general tendency to talk, the more participants spoke about the news. Men talked slightly more about the news than women. Overall, the model explained 11 % of the variance. Next, looking at the *intention to talk about the news*, we can see only one significant predictor. The more probable a user belongs to the mobile news use repertoire of *visual social media* and *news apps*, the more they intend to talk about the news compared to the reference cluster Mixed readers. Overall, the model explained 17 % of the variance.

5 Discussion

Over the past three decades, our media ecologies have undergone a substantial transformation, not at least changing how we get in touch with the news. Ways of access have increased, intermediaries such as search engines or social media have emerged, and online and mobile media have made news access possible across our daily lives. This tremendous increase has made processes of news curation, as described by Thorson and Wells (2016), ever more critical and hence also tremendously increased the variability of news access across our daily lives. However, apart from research on news repertoires, most research does not focus on this variability in news access across users' daily lives but on differences between users. Mobile media, being meta-media (Humphreys et al. 2018), provide an excellent microcosmos to study this intra-personal variability in news use. Hence, in this study, we set out to investigate (1) *which types of mobile news access can be identified based on the type of platform and reception mode*, (2) *which mobile news repertoires can be uncovered based on the previously identified types of mobile news access*, and (3) *how are mobile news repertoires and users' characteristics (news-finds-me perception, general tendency to talk about the news) related to users' tendency to talk about the news used on mobile media?* To answer these questions, we conducted an experience sampling study (MESM) to allow for the measurement of both intra- and inter-personal variations in mobile news consumption. In addition, this methodological approach also provides us with more reliable data on short-term high-frequency media use, such as

mobile news use, compared to retrospective cross-sectional surveys (Naab et al. 2019).

By first focusing on the types of mobile news access, we identified five different types, differing in reception mode and type of platform used to access the news: *Direct app access*, *Listening & watching*, *Social media (textual)*, *Social media (visual)*, and *Direct website access*. Two of these types rely directly on journalistically curated content via apps (*Direct app access*) or news websites using the smartphone's browser app (*Direct website access*). This access to journalistically curated news is probably also true for *Listening and watching*, with news mainly accessed auditorily via a streaming app. These types of mobile news access account for more than half of our sample's mobile news access situations. A smaller part of mobile news access involves intermediaries, most notably social media platforms. Here, we can distinguish between mobile news access involving textual information, mainly via Facebook or Twitter (*Social media [textual]*), and situations in which news is encountered more visually, primarily involving Instagram and YouTube (*Social media [visual]*). The types of mobile news access we uncovered empirically in our study fit well with news curation processes described theoretically by Thorson and Wells (2016). Types such as *Social media (textual)* and *Social media (visual)* combine social and algorithmic curation processes. In contrast, *Direct app access* or *Direct website access* is closer to personal and journalistic curation processes.

Condensing those types of mobile news access into mobile news repertoires, we see four: *Direct news access*, *Mixed readers*, *Visual social media and news app*, and *Listening and news apps*. The first and most notable finding is that all repertoires uncovered a considerable mix of mobile news access types and, hence, curation processes, empirically supporting Thorson and Wells's (2016) argumentation. *Direct news access* is the only repertoire clearly dominated by one access type (i.e., *Direct app access*). For all other mobile news repertoires, the most prominent access type involved accounts for, at most, just over half of the situations involved. We see that focusing not only on inter- but also intra-personal differences in news use is appropriate given users' behaviors in our current high-choice media environments. Hence, future research should study variation in (mobile) news use as both differences between people and as variance within users' daily lives. Studying the short-term temporal dynamics (i.e., changes within a day) of intra-individual variance in mobile news use could be a worthwhile next step in furthering this line of research. Also, future research will need to dig deeper into the situational context of news use and its consequences. For example, we should investigate whether incidental news exposure is tied to specific situational contexts, as also questioned by Goyanes and Demeter (2022) based on their qualitative study of Spanish news consumers. Going along with this, we might also ask whether the news-finds-me perception or news avoidance is a person-level trait or a situation-level state. Empirical studies on the

development of news avoidance during the Covid-19 pandemic (e.g., de Bruin et al. 2021) give first hints at intra-personal variability of news avoidance based on the context.

We also see that no mobile news repertoire in our study solely relied on news access via intermediaries such as social media. Even the two repertoires marked by access via social media (i.e., *Mixed readers* and *Visual social media and news app*) contain more than a third of access types relying on direct access to journalistically curated content (i.e., *Direct app access* and *Direct website access*). Hence, we call for a more nuanced view on (mobile) news access when gauging the positive and negative effects of changes in how people get in touch with the news, especially when studying social media as intermediaries in news access. Again, returning to Thorson and Wells's (2016) curated flows framework, we see that, at least in our sample, social and, most importantly, algorithmic curation processes are not yet governing news consumption.

Finally, we see that the different mobile news repertoires are similar in how users talk about the news. Overall, this finding can be interpreted positively as it suggests that the heterogeneity of mobile news repertoires does not influence the basic societal process of talking about the news. Regarding the slight increase in the intention to talk about the news encountered with the repertoire of *Visual social media and news apps*, future research is needed to uncover the mechanisms at play here. Also, we do not see any influence of the news-finds-me perception on the (intention to) talk about the news. Again, we see this as a positive result, as people who do not actively seek news (i.e., news-finds-me perception) do not talk less about news than others. This finding is reassuring concerning deliberative democracies.

Of course, our findings need to be interpreted cautiously due to our study's limitations. First and foremost, this study relies on a small and non-representative sample of highly educated young adults in Germany. Regarding RQ3, this only allowed us to integrate gender as a meaningful sociodemographic control variable into the analysis. Future studies should extend our findings beyond these boundaries, testing how types of mobile news access and mobile news repertoire change, or even new access types and repertoires remain to be uncovered when considering a broader educational or age range or extending the findings beyond the German context. Second, we limited our focus to mobile news use, taking this microcosmos of variability in mobile news access as a proxy for our broader media ecologies. Again, future research must extend this scope and investigate the variabilities in types of news access and news repertoires, considering our entire media ecologies.

Despite these limitations, we provide first insights into the variabilities in mobile news repertoires based on the types of mobile news access involved. With this, we highlight the necessity for future research to assess differences between users and within users' daily lives when studying news consumption and its potential consequences.

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