



## News snacking and political learning: changing opportunity structures of digital platform news use and political knowledge

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### ABSTRACT

The increasing prevalence of news snacking – that is, the brief, intermittent attendance to news in mainly digital and mobile media contexts – has been discussed as a problematic behavior potentially leading to a less informed public. Empirical research, however, that investigates the relationship between news snacking and political knowledge is sparse. Against the background of changed opportunity structures in increasingly digital and mobile media environments, this study investigates how news snacking relates to the breadth and depth of political knowledge in society. Based on an online survey of the German population ( $N = 558$ ), we examine how snacking news affects political event and background knowledge gains using different digital news platforms. Results show that users who exhibit high levels of news snacking learn substantially less from news use across different types of digital platforms.

### KEYWORDS

News snacking; political knowledge; political learning; social media; smartphones; knowledge gaps

The digital nature of today's information environment creates new opportunity structures for media exposure. New channels (such as smartphones) and new platforms (such as social media) can turn news exposure from a rather self-contained activity into an almost ubiquitous experience. Despite the increasing use of mobile devices and digital media platforms for news exposure, previous research has found little evidence that citizens learn about political events and backgrounds from such exposure (see a recent meta-analysis by Amsalem & Zoizner, 2022). This trend is problematic, as it is only through learning from news that an informed citizenry can be secured as a foundation for a functioning democracy (Downs, 1957).

One possible reason for inconclusive results on digital news learning is that knowledge gains are not dependent on *whether* people use new channels and platforms but on *how* they use them. This study focuses on news snacking as a usage phenomenon that can impact the extent to which citizens learn from news exposure. We argue that not the mere usage of a platform is responsible for learning from the news, but the way users attend to the news they use. News snacking – defined as intermittent, short-term news exposure that is geared toward

brief reviews of contents rather than a thorough examination of information – is a result of new opportunity structures that digital media and societal developments present: the ubiquitous access to information via mobile device (Van Damme, Martens, Leuven, Vanden Abeele, & Marez, 2019), the headline-driven formats of digital platforms (Schäfer, 2020), and a general acceleration of social life (Rosa, 2003). Consequently, the *number* of news encounters increases with these opportunities, while the *duration* of news sessions in digital media decreases (Molyneux, 2018).

This paradox begs the question of what digital media use means for political learning. The increase of news encounters at the detriment of time spent with a single article or video may not universally complicate political learning but shift learning outcomes toward event-based knowledge. In contrast, news snacking may especially complicate learning about background information on a topic. While the prevalence of news snacking itself as an increasingly habitual user pattern is well explored (Costera Meijer, 2007; Molyneux, 2018; Schäfer, 2020), the implications of news snacking for individual political learning, knowledge acquisition, and the ultimate question of how well the public is informed about public affairs

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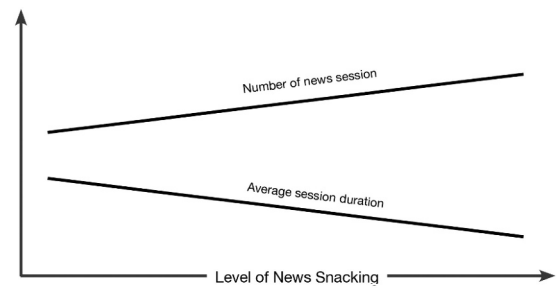
remain unclear. Our study, therefore, investigates (1) whether users of digital media platforms learn about political news and (2) examines whether learning from digital platform news is dependent on the level of news snacking.

To this end, an online survey representative of German Internet users ( $N = 558$ ) was conducted that applied extensive measures of news exposure on digital platforms. The current affairs knowledge questions were aligned to the field time of the survey and addressed events reported in the week before the survey was launched. This approach helped to assess actual learning from news media exposure since knowledge about these topics could not have been obtained before the referenced week under investigation. Results indicate that users showing higher levels of habitual news snacking learn substantially less from almost any type of digital platform news exposure – with no, or in some cases even negative, learning outcomes from increased news use frequency.

### News snacking on digital platforms

A snack is a small amount of food that is eaten between meals. As with food, today, many people consume news in small portions in between other activities, and sometimes, these snacks are all the news they consume in a day (Sveningsson, 2015). News snacking is a usage phenomenon that describes a specific behavior of attending to the news. It is fueled by the digitalization of media content as well as the possibility of ubiquitous media access and can be understood as an outcome of social acceleration – the speeding up of social life (Rosa, 2003).

News snacking is thought to increase the single encounters with news that people have throughout the day while the duration of each news usage session decreases (Figure 1). Potential outcomes are lower levels of involvement when processing content, either because of situational disturbances or so-called flow experiences of absent-minded-scrolling (Lupinacci, 2021). Thus, news snacking is understood as intermittent, short-term exposure to news, characterized by briefly checking headlines and teasers rather than an in-depth involvement with information. While skim reading as such is not a new phenomenon, it is



**Figure 1.** News snacking as a function of number of news sessions and session duration. *Note:* Based on McKenzie (2013)

only in recent years that such behavior has been described as the “new normal” (Liu, 2005; Wolf, 2018). Three factors characterizing digital societies make news snacking a particularly likely phenomenon: The *time* available to consume news, the *channels* through which information is accessed, and the *platforms* that present news.

### Time

Cyberoptimists have hoped for the Internet to be a place for deepened involvement, with all information being only a click away. In theory, news channels and platforms could contribute to increased involvement with news content, especially in tranquil moments that allow for a long read or a focused watch. However, while a multiplication of channels and platforms increases the opportunity for news exposure, social acceleration – that is, the speeding up of social life (Hsu & Elliott, 2015; Rosa, 2003)—simultaneously creates a necessity for shorter engagement intervals, not only for news. Technological acceleration describes the “reduction of time needed for goal-oriented processes” (such as information gathering), while social acceleration describes an “acceleration of a pace of life.” The subsequent paradox outlined by Rosa (2003)—the scarcity of “free” time despite a decrease in time needed to complete social processes (see also Hsu & Elliott, 2015)—can be directly transferred to current news usage: Although it is easier than ever to access news, people feel they have little time to follow it (Newman et al., 2017). Acceleration of speed of life, hence, is an underlying foundation that determines snacking behavior.

## Channels

People can access news through different channels. By channels, we understand the direct (and even physical) means through which information is received, for example, a newspaper or a mobile device.<sup>1</sup> The channels through which media content is accessed have started to diversify drastically with the emergence of the Internet. While news was mostly consumed in fixed daily routines in the past (“*the morning newspaper*”, “*the evening news broadcast*”), online access to news got interwoven throughout the day, making news consumption increasingly an in-between activity at home or at work (Diddi & LaRose, 2006). Moreover, mobile Internet and the emergence of smartphones, smartwatches, and other mobile devices make news access ubiquitous and enable users to attend to the news at locations and times of their own choice (Van Damme, Martens, Leuven, Vanden Abeele, & Marez, 2019). Thus, overcoming spatial barriers to news access has created a multitude of situations in which news could be accessed that were hardly possible in the past. Commuting, a doctor’s waiting room, or a checkout queue are prime examples of how the constant proximity of mobile devices enables news access in almost every situation people find themselves in (Ohme & Mothes, 2020; Sveningsson, 2015) and showcases how new channels can enable news snacking behavior.

## Digital platforms

In contrast to channels, platforms are digital infrastructures that bring together different users and content providers (Srnicsek, 2017, p. 43). They are subordinate to channels, as social media platforms can be, for example, can be used on a desktop PC or a smartphone. Digital producers and consumers meet on digital platforms and create online spaces where users eventually attend to or distribute information. New platforms that allow online news consumptions are a second driver of news snacking, as they have increased access to news free of charge (Arrese, 2016) and, thereby, the frequency of encounters. These encounters, in turn, are taking place in contexts that are characterized by two mechanisms: the hyperlink structure of online media

(Eveland, 2003) and the newsfeed and video story functions found mainly on social media platforms (Schäfer, 2020). The nonlinearity of websites creates two levels of news exposure: a first level that remains at an overview page of headlines, pictures, and teasers, and a second level when users follow links to full texts or videos (Ohme & Mothes, 2020). As previous research indicates, quick skimming of headlines on the first level of digital platforms goes along with low motivations for further engaging with political news (Schäfer, Sülflow, & Müller, 2017). Platform navigation, hence, favors engagement with headlines and, thus, news snacking rather than involvement with full news pieces. Relatedly, digital platforms have been discussed as driving inadvertent news exposure (e.g., Tewksbury, Weaver, & Maddex, 2001; Weeks & Lane, 2020) or “news-finds-me-perceptions” (e.g., Gil de Zúñiga, Weeks, & Ardèvol-Abreu, 2017) and people can indeed learn from incidental exposure to news on digital platforms (e.g., Bode, 2016). These observations are, however, different from news snacking, as inadvertency and the news-finds-me perception refer to user expectancies toward contents rather than the attendance to news itself.

## Boundary conditions

Importantly, the very concept of news refers to a certain brevity of information presented. News must be brief because they are often produced in close succession to an event and need to be delivered to audiences with reasonable timeliness (Waisbord, 2019). Some formats, such as skimable newsletters, out-of-home news screens, or the top-of-the-hour radio newscast, are even meant for brief information reviews. Hence, not every attendance to short news items should be considered news snacking. Rather, news snacking is a behavioral pattern that emerges as a function of time acceleration and growing availability of news on digital platforms and describes the intermittent, short-term exposure to news. *However*, a more in-depth review would be possible (e.g., by clicking on links, spending more time with reading, or watching longer news items). Snacking news is a decision people make, with potential outcomes for how well

this intermittent, short-term exposure informs them.

### Political knowledge through news snacking? Learning about events and backgrounds

While time, channels, and digital platforms were identified as drivers for news snacking behaviors, encounters with political information in a digital news environment ultimately occur on platforms specifically. News snacking is thereby understood as a function of time acceleration, and the growing availability of technical channels and thereby may affect the quality of exposure to information on platforms. Moreover, the usage of channels is subordinate to and not independent of the usage of platforms, as described above. This article, therefore, proceeds to investigate the specific interplay between digital platform usage and news snacking. Specifically, we test how news snacking moderates the exposure to news on five digital platforms: news websites, social media, news apps, video platforms, and other websites.

Previous research often expected a direct relationship between higher levels of digital platform news use and greater learning outcomes, with mixed results (see Amsalem & Zoizner, 2022). For the use of dedicated news websites, studies consistently found that a greater extent of usage is positively associated with knowledge gains (Boukes, 2019; van Erkel & Van Aelst, 2020). However, extant research challenges the ability of social network sites to contribute to citizens' political knowledge (see, e.g., Boukes, 2019; Cacciatore et al., 2018; Dimitrova, Shehata, Strömbäck, & Nord, 2014; Lee & Xenos, 2019; Shehata & Strömbäck, 2018; van Erkel & Van Aelst, 2020). A recent meta-analysis supports these findings by showing a very small but positive relationship between social media use and political knowledge. Importantly, studies that differentiate between social media platforms (e.g., Boukes, 2019) or content exposure on that platform (e.g., Park, 2019) find that learning effects may not be uniform and differ across platforms. Also, the question of knowledge gained from mobile news exposure is still open. Stephens et al. (2014) did not find mobile news app usage to contribute to political knowledge, while Stroud, Peacock, & Curry (2020) and Ohme and Mothes

(2020) found positive knowledge gains from push notification and mobile campaign news exposure as well as positive learning outcomes from mobile newsfeed browsing in an experimental setting (Ohme, Maslowska, & Mothes 2022a). Research on news learning from video platforms is sparse, but exposure to news on video platforms has recently been connected to disinformation and distrust in the media (Vaccari & Chadwick, 2020) and to lower levels of processing (Bowyer, Kahne, & Middaugh 2017).

We argue that the relationship between digital platform news use and political learning is not only direct, as tested in many previous studies, but conditional on *how* people attend to news due to different opportunity structures. In the context of political knowledge, “opportunity” is understood as “the availability of information and how it is packaged” (Barabas, Jerit, Pollock, & Rainey, 2014, p. 841). In conjunction with individual ability and motivation, opportunity structures form the basis for political learning through media use (Delli Carpini & Keeter, 1996; Prior, 2007). Political knowledge – most broadly defined as factual information stored in long-term memory that can be recalled when necessary – is mostly differentiated into textbook knowledge (i.e., the number of MPs in a country) and surveillance knowledge (e.g. Delli Carpini & Keeter, 1996; van Erkel & Van Aelst, 2020), whereas knowledge about recent political facts is particularly helpful for citizens to “participate intelligently in governmental affairs” (Schudson, 1998, p. 310).

In order to identify differential knowledge gains via news snacking, we suggest breaking down the established concept of surveillance knowledge further into *event-related knowledge*—understood as “knowledge of common events or situations in the world” (Hare, Jones, Thomson, Kelly, & McRae, 2009) such as names, terms, actors, or locations of current events (Edgerly, Thorson, & Wells, 2018)—and *background knowledge*, which refers to the historical development and the broader context of reported events, allowing for a deeper understanding of the details behind current political affairs, and for drawing connections between single events (Donsbach, Rentsch, Mothes, & Walter, 2012). This helps us to test whether news snacking moderates the relationship

between digital platform news use for different types of political knowledge. The concepts of event and background knowledge also relate back to the different levels of selective exposure on digital platforms – while event information (e.g., names, terms, actors, or locations) is often found in headlines, teaser texts or video snippets, background information (e.g., additional details that help to deepen understanding and contextualization) are more often found in full text or longer video formats (Ohme & Mothes, 2020). As an example: The fact that the EU Parliament has passed a “Directive on Copyright in the Digital Single Market” would be an event that users can learn about from digital platform news use – even if they intermittently and briefly attend it – because the event and actor are likely to be presented in headlines or teasers. The question of what this directive included (like we asked in this study) is considered background information of greater detail which one is more likely to learn about when involving with news content in greater depth by consistently reading a full text or watching a longer cast. In our case, only around 10% of respondents answered this question correctly.

News snacking is thought to impair the role of mere exposure for current affairs knowledge (e.g., Costera Meijer, 2007), but effects may not be uniform. An increase in news encounters may help to increase the breadth of knowledge and, thereby, event knowledge, while short, intermittent exposure comes at the expense of depth of knowledge and, thus, background knowledge (see Prior, 2007). News snacking is expected to make a difference here, as event-related information (i.e., Who, What, When, Where, see Waisbord, 2019) is

more likely to be found in headlines, teaser texts, video previews, or at the beginning of a news piece. As news snacking is thought to increase the number of news encounters, to the detriment of deeper involvement, event-related knowledge should increase with higher levels of news snacking while chances to gain background knowledge decrease. Ohme et al., 2022 showed that short episodes of news use in noisy environments, when being distracted or paying little attention to the content at hand, can substantially complicate knowledge gains. Similarly, Costera Meijer (2007, p. 112) pointed out that short encounters with news on the go may “not lead to solid knowledge, but to ‘impressions’” of being informed. Time spent with the news is a crucial predictor of political knowledge in that it affects the chances of news facts being stored in long-term memory and being recalled from there (see Eveland, 2002; Grabe et al., 2000; Ohme et al., 2022). As a consequence, higher exposure times are consistently found to be associated with higher levels of political knowledge (see Barabas, Jerit, Pollock, & Rainey, 2014 for an overview), while shorter exposure times are linked to lower levels of political knowledge (Molyneux, 2015). Moreover, reading a full news article has a more positive relationship with factual knowledge than only seeing skimming news posts in a social media news feed (Schäfer, 2020). By attending news snippets in various contexts with little time, users exhibiting higher levels of news snacking should learn more about *news events* from their digital platform news consumption but less about *background knowledge* on these events (see Figure 2). We will therefore examine the following hypotheses:

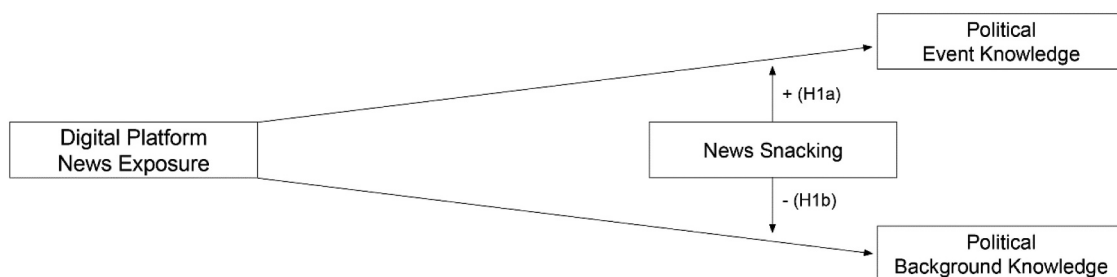


Figure 2. Conceptual model.

**H1a:** *The relation between the frequency of digital platform news usage and political event knowledge is positively moderated by news-snacking behavior.*

**H1b:** *The relation between the frequency of digital platform news usage and political background knowledge is negatively moderated by news-snacking behavior.*

## Method

To address our hypotheses, we conducted an online survey with a quota sample of the German population in September 2018. Respondents were German Internet users and recruited via e-mail from the pool of an international research panel provider, screened for quotas based on age, gender, education, and political interest. Participants received a monetary incentive in return for their participation. Of the 3235 invited participants, 660 finished the survey, equaling a response rate of 20.4%. To be able to test our hypotheses, we only included respondents who, in the last week, had received news via digital channels, leaving us with a final sample size of 558 respondents who did not systematically differ between the recruited and the final sample in terms of age, gender, education, and political interest. To assess the relationship between news exposure and political knowledge in detail, the knowledge questions that participants were asked were aligned with the news published during field time. This is an important advantage of our design, as it minimizes the chances that respondents had learned about this information prior to the field time, which allows for establishing a prospective relationship between exposure and learning (see Shehata & Strömbäck, 2018, for a similar approach).

## Sample

The sample was 51% female (one participant identified as diverse in gender) and had a mean age of  $M = 48$  years ( $SD = 16$  years). Hence, participants were slightly older than the average German population at that time (44 years, German Federal Statistical Office, 2018). Only small differences existed with regard to education, with 33%

(German population: 34%) of participants holding a secondary school certificate, 22% (German population: 24%) a higher (technical) education entrance qualification, and 33% (German population: 33%) a degree in higher education (German Federal Statistical Office, 2018b). In addition, based on German data from the 2016 European Social Survey (ESS, 2020), we paid special attention to receiving a balanced sample in terms of political interest, which is a crucial criterium in studies that investigate learning from news exposure. Based on this quota, 24% (ESS: 22%) indicated being very interested in politics, 47% (ESS: 43%) were quite interested, 27% (ESS: 32%) were hardly interested, and 4% (ESS: 3%) were not at all interested in politics.

## Measures

*Digital platform news exposure* was measured using a two-step approach. We first asked them about the devices and, second, about the platforms. Specifically, respondents were asked to indicate how many days in the last seven days they had listened to, read, or watched political news via different channels, such as a linear TV set, a printed newspaper, a PC, or a smartphone. Respondents who indicated exposure to digital channels were, in a second step, asked about the *platform* through which they received news, such as a news website, a social media platform, or a smartphone app, using the same scale. An overview of the political news use frequency by platforms can be found in Table 1. On average, respondents reported having been exposed to political news on 2.4 of the past seven days. In terms of platforms, websites of newspapers were used most frequently, followed by news apps and social media platforms. In the following analyses, frequency of newspaper and broadcaster website usage was combined into a general measure of news website exposure ( $M = 1.7$ ,  $SD = 1.9$ ,  $Min = 0$ ,  $Max = 7$ ).

*Political knowledge* as the main dependent variable in this study was measured by asking respondents to answer eight multiple choice questions about news on public affairs that had been published during the seven days before the survey was launched by giving them four different options per question. During that time, researchers collected

**Table 1.** Frequency of news exposure by channels and platforms.

Platform	Obs.	Mean	Std. Dev.	Min	Max
Newspaper Website	558	<b>2.2</b>	2.6	0	7
News App	558	<b>2.1</b>	2.5	0	7
Social Media (e.g., Facebook)	558	<b>1.9</b>	2.5	0	7
TV Broadcaster Website	558	<b>1.2</b>	1.9	0	7
Video Platform (e.g., YouTube)	558	<b>1.1</b>	1.9	0	7
Other Websites	558	<b>1.0</b>	1.8	0	7

Note. Means present the average number of days people reported exposure to political information.

several prominent news items for each day and developed questions relating to event and background knowledge on these items. These questions were presented to participants during the survey, along with questions soliciting their news exposure precisely for the previous seven days. Hence, knowledge that was solicited during field time could not have been acquired before. This design was used to establish a closer and more causally interpretable relationship between news exposure and news knowledge (see Shehata & Strömbäck, 2018, for a similar approach). Respondents were given a maximum of 20 seconds to answer each question to avoid the possibility that they look up information online. The selection of questions ensured equal variance in difficulty for both types of political news knowledge. Four questions asked about event knowledge, while the remaining four questions were related to background knowledge. Event knowledge questions could be answered correctly by merely reading headlines or short summaries of the news, while background knowledge questions could only be answered correctly after further engaging with the news coverage of the specific events. For the analyses, we calculated an individual sum score for event knowledge and for background knowledge, and an additional sum score for both knowledge types combined. On average, respondents gave correct answers to 3.5 of the overall eight questions ( $SD = 1.8$ ). The two

summative indices for each knowledge type ranged from 0 (*no correct answers*) to 4 (*all questions answered correctly*). On average, participants had a slightly higher *political event knowledge* ( $M = 2.1$ ,  $SD = 1.6$ ,  $Min = 0$ ,  $Max = 4$ ) than *political background knowledge* ( $M = 1.8$ ,  $SD = 1.1$ ,  $Min = 0$ ,  $Max = 4$ ). The full list of questions asked can be found in Table 2.

In an exploratory attempt to capture participants' habitual level of *news snacking*, we asked about their agreement to five items regarding intermittent online news exposure. Basic measurement construction procedures were conducted: all items correlated at least at .3 with at least one other item; the Kaiser-Meyer-Olkin measure was at .63 and, thus, above the recommended value of .6; and Bartlett's test of sphericity was significant ( $\chi^2(10) = 948.139$ ,  $p < .001$ ), confirming a shared common variance among items (Neill, 2008). Factor analysis revealed one common factor with an eigenvalue above one (1.84, subsequent factor: .58) that explained 91% of variance (subsequent factor: 29%). These robust findings give confidence that the items used resemble one underlying factor suitable to assess news snacking based on a succinct scale, although a more solid scale construction of news snacking is warranted. For each item, participants were asked to indicate how strongly the given statements applied to them (1 = *not at all*; 5 = *fully*), with higher values expressing a higher level of news snacking.

**Table 2.** Questions used to measure event and background current affairs knowledge.

Question	% correct
<b>Event</b>	
Which two companies announced their merge last week?	67,7
What is the name of the federal official that SPD chairwoman Andrea Nahles asked to resign last week?	59,2
Which trade group announced to stop selling disposable cutlery by 2020?	32,9
For which country did Minister of Defense Ursula von der Leyen announce plans to extend the mandate of the German federal armed forces?	13,3
<b>Background</b>	
Which energy supplier plans forest clearings at the Hambacher Forst to extend coal mining activities?	68,8
How high are the debts in the national budget that Germany assumes for 2019?	55,3
Which rule is part of the readmission agreement with Italy that was initiated by Horst Seehofer last week?	46,1
What is part of the copyright law that was passed by the European Parliament the last week?	10,3

**Table 3.** Items and descriptive statistics of the news snacking measure.

Item Statement	Obs.	Mean	Std.	Min	Max
			Dev.		
It is enough to read the headlines of political articles and videos online, without clicking on them.	558	2,8	1,2	1	5
The Internet is a good place for me to read long political articles or watch long political videos (recoded)	558	3,0	1,3	1	5
I mostly only read short political articles or watch short political videos online	558	3,0	1,2	1	5
When I'm waiting for something or have time while being on the go, I inform myself online in detail about current affairs (recoded)	558	3,4	1,3	1	5
When I'm waiting for something or have time while being on the go, I quickly check the news online.	558	2,9	1,4	1	5

The items were summed into an additive news snacking index with acceptable internal consistency ( $M = 3.0$ ,  $SD = .52$ ,  $Min = 1$ ,  $Max = 5$ , Cronbach's  $\alpha = .70$ ). The full list of items can be found in [Table 3](#).

In our analyses, we added a number of variables to the models that are commonly controlled for in research that investigates the relation between news exposure and political knowledge (see Boukes, 201; Lee & Xenos, 2019; van Erkel & Van Aelst, 2020): age, education, gender and political interest ( $M = 6.6$ ,  $SD = 2.5$ ,  $Min = 1$ ,  $Max = 10$ ). In addition, we include the self-reported frequency of exposure to news offline in the form of print news ( $M = 2.4$ ,  $SD = 2.5$ ), television news ( $M = 3.1$ ,  $SD = 2.9$ ), and radio news ( $M = 2.8$ ,  $SD = 2.7$ ) in the last seven days ( $Min = 0$ ,  $Max = 7$ ) to include the possibility that people have learned about political issues through these channels.

### Analytical strategy

First, we test the direct, linear relationship between news use on different platforms and the two types of political knowledge (Model 1). Second, we run an OLS regression with the interaction terms added for each digital platform type separately (Model 2 to 6). The slope of the estimate for each analysis with interaction term, including the confidence intervals, is plotted with the R package *interplot* (Solt & Yue, 2015) in [Figures 3a and 3b](#) to allow for a better understanding of the direction of learning from digital news exposure, conditioned by the level of news snacking. To allow for the possibility of learning about political information other than from digital sources, we include offline news use as a control variable. Marginal effects of news snacking on event knowledge by digital platform. Marginal effects of news snacking on background knowledge by digital platform.

### Results

H1 and H2 predicted that the relationship between using different digital platforms for news and the two types of political knowledge is conditional upon whether people score lower or higher in news snacking. To investigate this, linear regression models with either political event knowledge ([Table 4](#)) or background knowledge ([Table 5](#)) as a dependent variable were estimated.

Higher age, levels of education, and political interest predict higher levels of political event and background knowledge while identifying as female was a negative predictor. Offline news media use variables were not positively related to higher levels of political event knowledge, but we find evidence that listening more frequently to news on the radio and reading about it in a print newspaper increase the likelihood of knowing more about political background information. Examining the unconditional relationship between the use of platforms, we find little indication of an increase in political knowledge for people with a higher level of attendance to news on these platforms. This finding is consistent for political event and background knowledge. Rather, higher intake of political news via video platforms and other websites predicts lower levels of political knowledge.

Consistently, news snacking was found to negatively moderate the relationship between the frequency of news exposure on digital platforms and both types of political knowledge. Hence, people with higher levels of news snacking learn less from more frequent news encounters on almost all digital platforms. Specifically, we find some evidence that learning about *political events* from video platforms, other websites, and social media platforms is (marginally) significantly conditioned by the level of news snacking: for those platforms, gains from increased news attendance are lower, the higher the



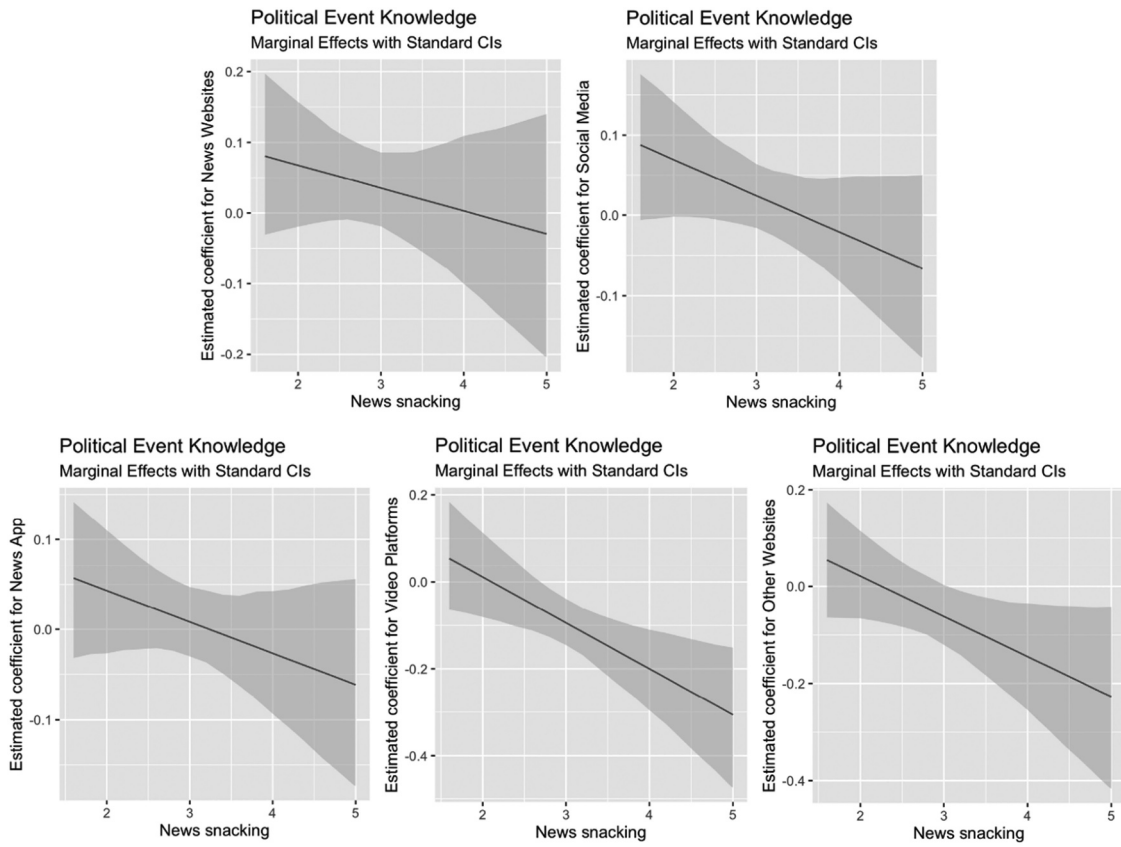


Figure 3a. Marginal effects of news snacking on event knowledge by digital platform.

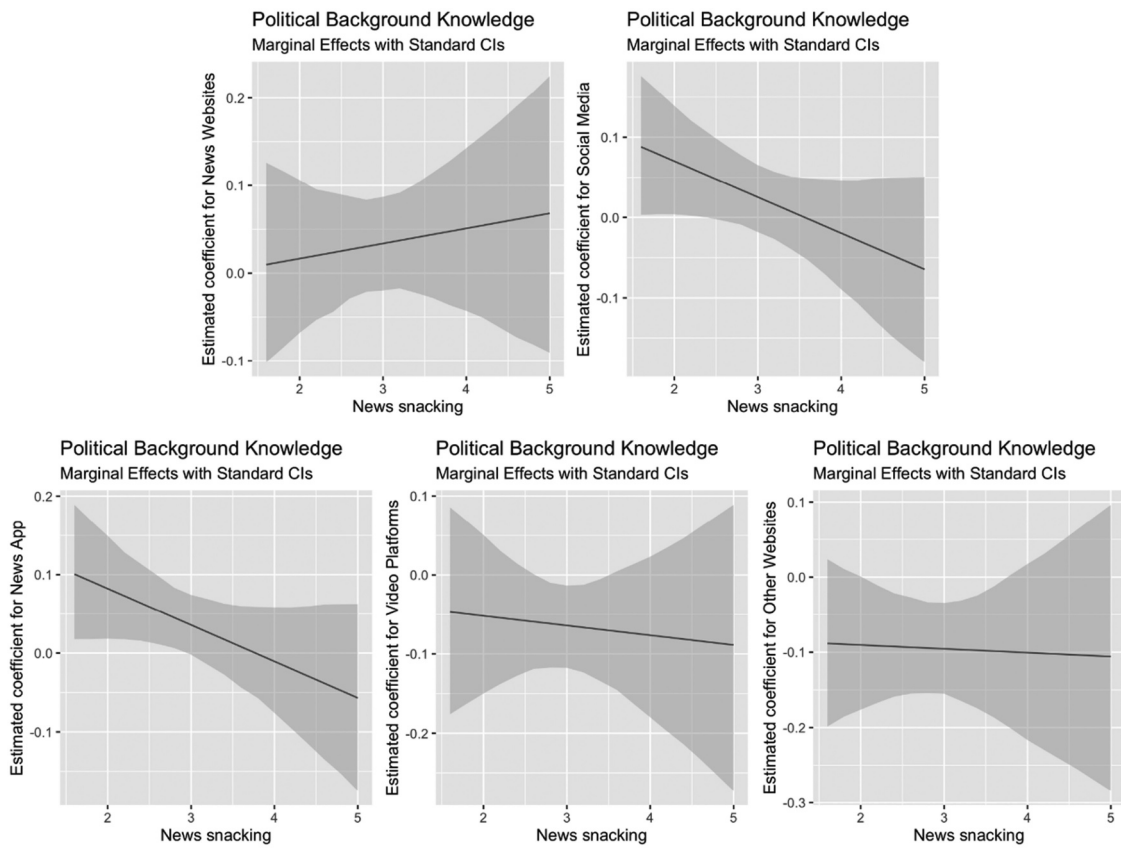


Figure 3b. Marginal effects of news snacking on background knowledge by digital platform.

**Table 4.** Predicting political event knowledge by platform, moderated by news snacking.

	Political Event Knowledge					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Controls</i>						
Age	.381*** (.003)	.379*** (.003)	.379*** (.003)	.379*** (.003)	.368*** (.003)	.370*** (.003)
Education	.105** (.049)	.106** (.049)	.107** (.049)	.107** (.049)	.106** (.049)	.106** (.049)
Female	-.161*** (.086)	-.162*** (.086)	-.162*** (.085)	-.162*** (.086)	-.162*** (.085)	-.162*** (.085)
Political Interest	.090* (.022)	.091* (.022)	.093* (.022)	.091* (.022)	.102* (.022)	.100* (.022)
Print News	.031 (.019)	.032 (.019)	.029 (.019)	.032 (.019)	.029 (.019)	.034 (.019)
Radio News	.049 (.016)	.049 (.016)	.050 (.016)	.048 (.016)	.044 (.016)	.045 (.016)
Television News	.005 (.015)	.006 (.015)	.004 (.015)	.009 (.015)	.004 (.015)	.009 (.015)
<i>Platforms</i>						
News Websites	.067 (.028)	.219 (.116)	.067 (.028)	.061 (.028)	.079 (.028)	.066 (.028)
Social Media	.055 (.021)	.053 (.021)	.357+ (.085)	.055 (.021)	.050 (.021)	.047 (.021)
News App	.020 (.019)	.019 (.019)	.021 (.019)	.242 (.087)	.018 (.019)	.024 (.019)
Video Platforms	-.167*** (.028)	-.162** (.028)	-.166*** (.028)	-.168*** (.028)	.385+ (.127)	-.162** (.028)
Other Websites	-.086+ (.031)	-.088+ (.031)	-.093+ (.031)	-.084+ (.031)	-.100+ (.031)	.302 (.123)
News Snacking	-.052 (.085)	-.027 (.111)	-.002 (.108)	-.020 (.104)	.008 (.099)	-.013 (.095)
<i>Interaction terms</i>						
News Snacking by						
News Websites		-.115 (.038)				
Social Media			-.309+ (.037)			
News App				-.223 (.028)		
Video Platforms					-.556* (.041)	
Other Websites						-.397* (.041)
N	558	558	558	558	558	558
adj. R <sup>2</sup>	.308	.313	.311	.309	.315	.317

Note: Standardized beta coefficients; Standard errors in parentheses.  
 $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

levels of news snacking are. For *political background knowledge*, we find a marginally significant interaction term for news app usage: users learn less from more frequent news app encounters, the more strongly they engage in news snacking behavior. Except for news websites, all other interaction terms are negative but do not reach statistical significance.

## Discussion

News snacking, the habitual behavior of quickly checking and skimming through news on smartphones and digital media platforms, is a prime example of how digital media environments enable new ways of using the news. Digital media channels such as mobile devices, platforms such as social media, and an increased acceleration of the pace of life impact the opportunity structures of news usage – and, thereby, how people attend to news. Accordingly, almost 40% of our sample of German Internet users indicated agreement with statements that suggest strong news snacking behavior.<sup>2</sup> This corroborates earlier findings that the quick checking of news items as a pastime activity and intermittent engagement with news on the go is a prevalent phenomenon in digital societies

(Costera Meijer & Kormelink, 2015; Forgette, 2018; Sveningsson, 2015). Our study specifically asked how news snacking is related to political knowledge gains in society and utilizes a design suited to investigate learning about current affairs via news exposure. Our findings have three important implications.

First, higher levels of news snacking are conditioning the direct relationship between news use on digital platforms and political knowledge about political events *and* political backgrounds in a negative manner. While the difference is clear and visible across almost all platforms, it is of moderate amplitude and does not reach statistical significance in all cases. Nevertheless, it must be noted that if a more substantial body of knowledge is considered than what was possible in this study, news snacking can result in significant knowledge gaps.

Second, our study could not establish the predicted pattern that news snacking would lead to greater breadth but not depth of political knowledge (see Prior, 2007). Rather, we find that with increased use of most digital platforms, users that “snack” news more than others gain little from their high levels of exposure. This suggests that the short skimming of headlines when being on the go does not contribute to the promotion of informed citizenry. In extreme

**Table 5.** Predicting political background knowledge by platform, moderated by news snacking.

	Political Background Knowledge					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Controls</i>						
Age	.248*** (.003)	.250*** (.003)	.248*** (.003)	.244*** (.003)	.246*** (.003)	.247*** (.003)
Education	.181*** (.048)	.180*** (.048)	.181*** (.048)	.184*** (.048)	.181*** (.048)	.181*** (.048)
Female	-.139*** (.084)	-.138*** (.084)	-.139*** (.084)	-.142*** (.084)	-.139*** (.084)	-.139*** (.084)
Political Interest	.135** (.021)	.134** (.021)	.135** (.021)	.137** (.021)	.136** (.021)	.136** (.021)
Print News	.080+ (.019)	.080+ (.019)	.080+ (.019)	.082+ (.019)	.080+ (.019)	.080+ (.019)
Radio News	.103** (.016)	.103** (.016)	.103** (.016)	.101* (.016)	.102* (.016)	.103* (.016)
Television News	-.006 (.014)	-.006 (.014)	-.006 (.014)	-.001 (.014)	-.006 (.014)	-.005 (.014)
<i>Digital platforms</i>						
News Websites	.055 (.028)	-.048 (.114)	.055 (.028)	.047 (.028)	.056 (.028)	.055 (.028)
Social Media	.026 (.020)	.027 (.020)	.036 (.084)	.026 (.020)	.025 (.020)	.025 (.020)
News App	.083+ (.019)	.084+ (.019)	.083+ (.019)	.396* (.085)	.083+ (.019)	.084+ (.019)
Video Platforms	-.118* (.028)	-.121* (.028)	-.118* (.028)	-.119* (.028)	-.049 (.125)	-.117* (.028)
Other Websites	-.160** (.030)	-.158** (.031)	-.160** (.031)	-.157** (.030)	-.161** (.031)	-.131 (.121)
News Snacking	-.049 (.083)	-.066 (.108)	-.047 (.106)	-.003 (.102)	-.041 (.098)	-.046 (.093)
<i>Interaction term</i>						
News Snacking by						
News Websites		.102(.037)				
Social Media			-.010(.026)			
News App				-.316+ (.027)		
Video Platforms					-.069(.040)	
Other Websites						-.029(.040)
N	558	558	558	558	558	558
adj. R <sup>2</sup>	.270	.269	.271	.273	.270	.271

Note: Standardized beta coefficients; Standard errors in parentheses.

+ $p < .10$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\*.

cases, respondents who said to mostly snack news and who attend news seven days a week (for instance, on a news website) knew as little about political current affairs as respondents who did not use news on such websites at all. Our study, hence, suggests that news snacking might indeed leave people with the impression of being informed rather than being knowledgeable, as suggested by Costera Meijer (2007).

Third, we find notable differences between digital media platforms and types of knowledge. Interestingly, strong news-snacking behavior has been shown to be detrimental to learning from social media platforms with their newsfeed character and their combined function of information and entertainment. Given the high levels of social media news use in society nowadays, news snacking may be one answer to the question of why studies consistently find rather low learning outcomes of social media news use (Boukes, 2019; Cacciatore et al., 2018; Dimitrova, Shehata, Strömbäck, & Nord, 2014; Lee & Xenos, 2019; Shehata & Strömbäck, 2018; van Erkel & Van Aelst, 2020). However, we find the same pattern across almost all digital platforms for news exposure. Lower knowledge gains for “news snackers” seem to be a more universal outcome and less dependent on the

platform. This suggests that users can learn from different digital platforms but that political learning outcomes depend on *how*, not if they use it.

Although not in the focus of the study, users of video platforms and other websites to get political information show marginal knowledge about current affairs. We can only speculate about reasons, but recent research about the usage of video platforms for news indicates that these platforms are primarily used for exposure to special interest news, often in a polarized news environment (Lopezosa, Orduna-Malea, & Pérez-Montoro, 2020). Furthermore, the usage of “other websites” may refer to non-journalistic actors that contribute to alternative media content. In line with the alternative nature of these sources (see Holt, Ustad Figenschou, & Frischlich 2019), they seem to convey little information about major political events and their backgrounds.

### Limitations

Our study faces a number of limitations. First, we relied on a single-country sample and our findings are thereby limited in their explanatory power to German Internet users. Additionally, the news

media exposure was measured aimed at reducing respondents' recall bias by asking specifically about the last week. However, our data is still based on self-reports and can thus not rule out social desirability inaccuracies (e.g., Slater, 2004). Future research should test the relationship between news exposure and learning on an empirical basis less susceptible to perceptual distortion (e.g., Karnowski, Kämpel, Leonhard, & Leiner, 2017; Mothes, Knobloch-Westerwick, & Pearson 2019) and/or on a more fine-grained level of analysis, for example using media diary studies, data donations, or tracking data (Ohme et al., 2023; Araujo et al., 2022; Mangold, Stier, Breuer, & Scharkow 2021). Second, assessing the level of political knowledge is a tricky task (Barabas, Jerit, Pollock, & Rainey, 2014). We tried to improve previous measures by timing the current affairs questions closely with the field time of the survey for a valid assessment of learning through media use. However, the distinction between background and event knowledge may be imperfect because although some information is less likely than others to be found in headlines and teasers, we cannot be entirely certain that our distinction holds for all news coverage in the given time frames since we did not analyze news content in this study. Third, as for the explicit aim of this study to investigate the role of news snacking for political learning, it was necessary to develop a specific measure for this concept. The index that we have developed shows good internal consistency and succinct scale conformance. However, future research should put this measure to test, especially in terms of social desirability biases. Although we assess the behavioral component of media exposure with this measure, it is fair to ask how strongly this measure assesses the state of how people attend to media, rather than self-perceptions of news users (see Ohme, Araujo, Zarouali, & de Vreese 2022b) for a similar discussion on news avoidance behavior. The small increase in R-square in our models is another indication that news snacking only explains a small fraction of the variance in political knowledge among respondents. Future research should use more precise measures of news encounters and session length, ideally across different spatial conditions, to include the behavioral component of news snacking more strongly. Fourth, the study tested for relationships of exposure to news on different, higher-order platforms but did not distinguish between

specific social media or other news platforms (e.g., different news apps or social media brands). We, therefore, suggest that future research more specifically investigates differences in political learning from using, for example, different social media and messaging platforms (e.g., Boukes, 2019), as it is possible that certain platform affordances and digital architectures attenuate the conditional effect of news snacking on learning (see Bossetta, 2018). Lastly, we rely on cross-sectional data, and although results point in the direction that people with high levels of news-snacking behavior learn less from digital news exposure, we cannot rule out the opposite interpretation, namely that people with low political knowledge show higher levels of news snacking.

New platforms in digital media environments provide new opportunity structures for accessing public affairs news, but at the same time, urge people to find new ways of navigating through the plethora of information offered to them. Intermittent, short-term attendance to headlines or teasers – as one of these strategies – seems to leave society less well-informed about political issues. In our study, people who used more superficial ways of attending to the news were less likely to know about scandals in the Federal Intelligence Agency, the latest law passed by the European Parliament, or developments that affect the environment in their own country. It is always debatable which topics are of political relevance. However, ultimately, a functioning society needs a common base of knowledge to discuss and act on. The study proposes the possibility that news snacking indeed leads to lower levels of knowledge in some digital contexts, especially in cases of high news use frequency, where people may think they attend to news a lot but still learn very little. This begs the question of how news media can secure a healthy diet of political knowledge among citizens when the formerly full meal of news exposure more and more becomes a snack.

## Notes

1. To be precise, channels can be both, the mode of transmission (i.e., paper, cable, cell service) and the mode of reception (i.e., printed articles, TV broadcast, smartphones). Given the focus on content (i.e., news) in

this study, we focus on the mode of reception for different channels.

2. Determined via a median split of the news snacking variable, whereas 40% of respondents scored 3.00 or higher on that scale.

## Disclosure statement

No potential conflict of interest was reported by the authors.

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