

# How Does Multi-Platform Social Media Use Lead to Biased News Engagement? Examining the Role of Counter-Attitudinal Incidental Exposure, Cognitive Elaboration, and Network Homogeneity

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## Abstract

Using an online panel survey in the United States, this study examines how multi-platform social media use impacts news engagement on social media. Results show that multi-platform social media use prompts incidental exposure to counter-attitudinal news and further encourages people to cognitively elaborate on the counter-attitudinal information, which in turn contributes to news engagement on social media. However, news engagement is performed in a biased way that is supportive of like-minded content and non-supportive of counter-attitudinal content. Furthermore, the indirect effect of multi-platform social media use on biased news engagement becomes stronger when one's network is more homogeneous. Although studies have pointed to the democratic prospects of multi-platform social media use as it leads to cross-cutting exposure, our results suggest that it could lead users to engage with news in ways that confirm their pre-existing attitudes and disconfirm counter-attitudinal ones.

## Keywords

multi-platform social media use, social media news engagement, counter-attitudinal incidental exposure, cognitive elaboration, network homogeneity

The development of the Internet and social media has given rise to a growing diversity of news diets worldwide. News organizations actively employ multiple social media platforms to distribute their news content. According to a report from the Pew Research Center (2019), among the highest traffic digital news outlets in the United States, 46% provide Android or iOS apps for their audience, 73% have released podcasts, and most are active in using social media like Facebook, Twitter, YouTube, and Instagram as part of their outreach. For a long time, news audiences were considered passive receivers of media content delivered by a top-down approach from political and media elites. However, individuals' engagement with news has increasingly drawn academic attention since social media affordances have the potential to allow people to interact more with the news, such as by joining discussions or sharing news items with others, rather than simply consume it passively.

Social media news engagement could have both cognitive and behavioral outcomes. Studies have found that news engagement, such as sharing a news story or

receiving comments on Facebook, causes participants to perceive a higher level of involvement, sense of influence, and sense of community (Oeldorf-Hirsch & Sundar, 2015; Stavrositu & Sundar, 2012). In the context of political news, social media news engagement is likely to enhance political efficacy, knowledge, and participation (Dimitrova et al., 2014). However, there is rising academic concern about the dark side of social media news engagement, which may cause the spread of misinformation, conspiracy theories, populism, and hate speech, as well as enhance political polarization (Quandt, 2018; Stroud, 2010). Therefore, more and more researchers have begun to explore different dimensions, predictors, and outcomes of

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social media news engagement (Ha et al., 2018; Park & Kaye, 2018; Steensen et al., 2020). Meanwhile, news audiences tend to consume multiple social media platforms and news outlets (Picone et al., 2015). Gottfried and Shearer (2016) documented that 34% of online news users access multiple social media accounts, surfing across Facebook, Twitter, Instagram, YouTube, and so on. News engagement plays a significant role in the development of a healthy democracy as it can facilitate political discussion and civic engagement (Mutz, 2006). Thus, the extent to which multi-platform social media use affects news engagement deserves special academic attention.

Although social media users have become increasingly active in combining sources from different social media platforms to construct information repertoires for their own interests (Taneja et al., 2012), there has not yet been any investigation of how multi-platform social media use influences people's engagement with political news when incidental news exposure and cognitive elaboration are considered as underlying mechanisms.

This study focuses on the use of different social media platforms in the political context (e.g., political news or discussions on social media platforms). It is widely acknowledged that social media algorithms can cause echo chambers, hindering cross-cutting exposure and deliberative political discussion (Mosseri, 2018; Sunstein, 2017). Haim et al. (2018) found that such filter bubbles may only have minor negative effects on news diversity. Nevertheless, it is still safe to anticipate that multi-platform social media use will be significant in influencing the extent to which people are exposed to diverse political viewpoints and elaborate on the information. However, this seemingly deliberative process may encourage people to engage with news in biased ways that support their pre-existing viewpoints and diminish disagreeing perspectives. This biased engagement may be amplified when their network is homogeneous. This study examines the effect of multi-platform social media use on different types of social media news engagement (i.e., supportive and non-supportive), considering incidental news exposure and cognitive elaboration as the mediators and network homogeneity as the moderator.

## Multi-Platform Social Media Use and News Engagement

Multi-platform use is defined as the "habit of paying regular attention to, or relying on, more than one information and communication technology modality" for social media consumption (Diehl et al., 2019, p. 429). In this study, we operationalize multi-platform social media use by measuring the number of social media platforms people use at least weekly.

Using multiple social media platforms that offer diversified informational opportunities provides chances for exposure to both pro- and counter-attitudinal viewpoints (Lee et al., 2014). Social media users could purposefully or

passively be exposed to news. News readers may actively seek information for their own purposes on social media platforms, or their networks may provide news content that they would not seek out purposefully (Oeldorf-Hirsch, 2018). Some users even believe that they no longer have to actively seek news about public affairs because important news will find them automatically through social media (Gil de Zúñiga et al., 2020). In this sense, information-seeking behavior, incidental exposure, and the "news finds me perception" (Gil de Zúñiga et al., 2020, p. 1605) all link multi-platform social media use with increased news exposure.

Technically speaking, social media news engagement refers to "an individual's interactions with news on social media that can be observed and acted upon by others in the individual's online social network" (Chan et al., 2018, p. 7), such as original posting, editing, commenting, reposting, sharing, or blocking posts. The social element of social media could also lead people to engage more with news (Kümpel, 2020), as users can disseminate news quickly through their online social networks and respond and react to it immediately. Wen and Wei (2018) considered multiple social media platforms as an "emerging networked sphere" that increases people's willingness to express opinions on controversial issues online (p. 3729).

However, Steensen et al. (2020) noted that engagement with news could have dimensions other than the digital traces that the users leave behind. These include the emotional dimension, which psychologically connects the media and audiences, the normative dimension, which distinguishes the good and bad engagement that users make, and the spatio-temporal dimension, which links engagement with social context across time and space. Thus, different types of social media news engagement may result from different motivations and result in different outcomes.

From the optimistic perspective, multi-platform social media use could lead to exposure to news with diversified viewpoints. Such cross-cutting exposure can help the audience engage more with news, such as through sharing, commenting, replying, and liking behaviors (Chan et al., 2018). In this sense, social media news engagement could contribute to healthy political discussion and civic engagement, which ultimately drives deliberative democracy (Mutz, 2006). However, it is also important to note that social media news engagement may cumulate on like-minded news content which will mainly consolidate users' own beliefs, such as by promoting in-group discussion and blocking minorities with an opposite perspective. These consequences have been widely discussed in the literatures on partisan exposure, selective exposure, and echo chambers (Stroud, 2010; Sunstein, 2017). Therefore, as we argue that multi-platform social media use could strengthen social media news engagement, this engagement is not limited to open-minded interactions but could also be biased harmful engagement that facilitates populism and political polarization (Barberá, 2020).

### **Specifying Supportive and Non-Supportive News Engagement**

It is important to consider news engagement as a multi-dimensional behavior. In reality, people post not only supporting comments but also criticism of news content through various kinds of activities on social media platforms. For example, posting positive opinions and liking or promoting a post are all types of engagement that show support of favored political views, while posting criticisms, editing negative comments, and blocking disliked information are all considered types of non-supportive engagement. Since supportive and non-supportive news engagement are opposite behavioral outcomes with different psychological patterns, the impacts of multi-platform social media use on these two outcomes could be different and should be considered simultaneously.

This study differentiates between supportive and non-supportive forms of engagement when examining the relationship between multi-platform social media use and social media news engagement. Building on the literature, we propose that there should be a positive effect of multi-platform social media use on both supportive and non-supportive social media news engagement given that using multiple platforms increases exposure to alternative news and discussion and also permits various forms of interaction. Our first hypothesis is proposed:

H1: Multi-platform social media use is positively related to (H1a) supportive and (H1b) non-supportive social media news engagement.

### **The Mediating Role of Counter-Attitudinal Incidental Exposure**

Social media platforms provide opportunities for people to come across news accidentally as a by-product of their online activities, reflecting Boczkowski et al.'s (2018) argument that "news comes across when I'm in a moment of leisure" (p. 3523). People may be incidentally exposed to news that is pro-attitudinal or counter-attitudinal. In this study, we focus on the role of counter-attitudinal incidental exposure given that counter-attitudinal exposure is mostly a by-product of a diversified and high-choice media environment (Lee et al., 2014). More importantly, we explore the types of social media news engagement that can be prompted by counter-attitudinal incidental exposure.

Increased heterogeneity of social media networks may lead to a higher likelihood of incidental exposure to news with political differences (Brundidge, 2010; Kim et al., 2013). In other words, surfing across multiple social media platforms could increase the chance of counter-attitudinal incidental exposure. Meanwhile, such exposure leads to mixed effects on users' social media news engagement.

Some argue that counter-attitudinal exposure can be not only unexpected but also unwanted. Thus, intentional avoidance will occur as psychological reactance to counter-attitudinal exposure such that people are more likely not to express their own ideas (Marcinkowski & Došenović, 2021). Some hold the opposite view that incidentally browsing counter-attitudinal content online could make people engage more with the topic. This increased news engagement could be deliberative. Beam et al. (2018) found that increased counter-attitudinal news exposure resulted in depolarization in the US context. However, the increased news engagement could be biased. When individuals are exposed to counter-attitudinal arguments, their pre-existing opinions and beliefs will be reinforced, resulting in a phenomenon known as the "backlash" or "backfire" effect (Guess & Coppock, 2020; Nyhan & Reifler, 2010). For example, partisans can affirm their political selves when encountering counter-attitudinal messages by expressing support for their own party while posting criticism against others (Knobloch-Westerwick & Meng, 2011).

The prior attitude effect and disconfirmation bias, which suggest that citizens are biased information processors, have often been used to explain the backlash effect (Taber & Lodge, 2006). When existing beliefs are challenged, the tendency to support one's own views will grow stronger, and people will also exert more effort to counter-argue against the argument that is not congruent with their beliefs. In this sense, we propose two related hypotheses regarding the backlash effect of counter-attitudinal incidental exposure:

H2a: Counter-attitudinal incidental exposure mediates the relationship between multi-platform social media use and supportive social media engagement.

H2b: Counter-attitudinal incidental exposure mediates the relationship between multi-platform social media use and non-supportive social media engagement.

### **The Mediating Role of Cognitive Elaboration on Counter-Attitudinal Information**

News elaboration has been recognized as a mental process in news information processing and a key element in the Cognitive Mediation Model of news learning (Eveland, 2002). The model emphasizes how the public learns about elections and other political issues from the news media through cognitive elaboration. In addition to effects on news learning, cognitive elaboration can also bridge political news exposure and political behavioral outcomes (Cho et al., 2009; Shahin et al., 2021). In this study, we explore the role of cognitive elaboration in the relationship between incidental exposure and social media news engagement.

Like general news exposure, incidental exposure to news on social media can also prompt cognitive elaboration, as information processing is a post-exposure cognitive process (Chen et al., 2022). Evidence has also shown that cognitive elaboration bridges incidental exposure and political behavioral outcomes (Gil de Zúñiga et al., 2021; Shahin et al., 2021). For instance, cognitive elaboration could mediate the positive relationship between incidental exposure and political knowledge (Gil de Zúñiga et al., 2021) as well as the positive relationship between incidental exposure and political participation both online and offline (Shahin et al., 2021). In this study, attention is paid to cognitive elaboration on disagreeing information as it is the cognitive process that occurs right after incidental exposure to counter-attitudinal information. Thus, it is reasonable to anticipate that counter-attitudinal exposure increases the level of cognitive elaboration on disagreeing information, which will further enhance users' social media engagement with political news. We propose that cognitive elaboration on counter-attitudinal information plays a mediating role in the relationship between counter-attitudinal incidental exposure and social media news engagement.

However, counter-attitudinal exposure can prompt defensive responses after processing attitude-challenging information because the information threatens existing attitudes (Quinn & Wood, 2004). Motivated by the defensive response, individuals are likely to try to protect their views and resist attitudinal change (Eagly & Chaiken, 1993). Thus, exposure to and elaboration on counter-attitudinal information may backfire (Nyhan & Reifler, 2010; Taber & Lodge, 2006). People are likely to engage with the news in ways that strengthen their pre-existing views as well as to counter-argue against arguments that are not congruent with their own.

According to the motivated reasoning theory (Edwards & Smith, 1996; Taber & Lodge, 2006), when people are exposed to information that clashes with their own beliefs, they will engage in biased information processing and criticize any argument that could challenge their beliefs. Therefore, it is likely that after incidental exposure to and cognitive elaboration on counter-attitudinal information, biased information processors will actively show support to their own party and try to persuade others to stand in line with them (i.e., supportive engagement). It is also likely that such processors will provide reasons and arguments for why the opposing party is not reasonable to reconfirm their own beliefs (i.e., non-supportive engagement). Accordingly, we assume that cognitive elaboration on counter-attitudinal information mediates the relationship between counter-attitudinal incidental exposure and supportive/non-supportive social media engagement.

In combination with H2 that counter-attitudinal incidental exposure mediates the relationship between multi-platform

social media use and social media engagement, we further propose a serial mediation model that multi-platform social media use indirectly influences the two types of social media news engagement (i.e., supportive and non-supportive) first through counter-attitudinal incidental exposure, then through cognitive elaboration on the information. Our third set of hypotheses are proposed as follows:

H3a: Counter-attitudinal incidental exposure and cognitive elaboration on counter-attitudinal information serially mediate the relationship between multi-platform social media use and supportive social media news engagement.

H3b: Counter-attitudinal incidental exposure and cognitive elaboration on counter-attitudinal information serially mediate the relationship between multi-platform social media use and non-supportive social media news engagement.

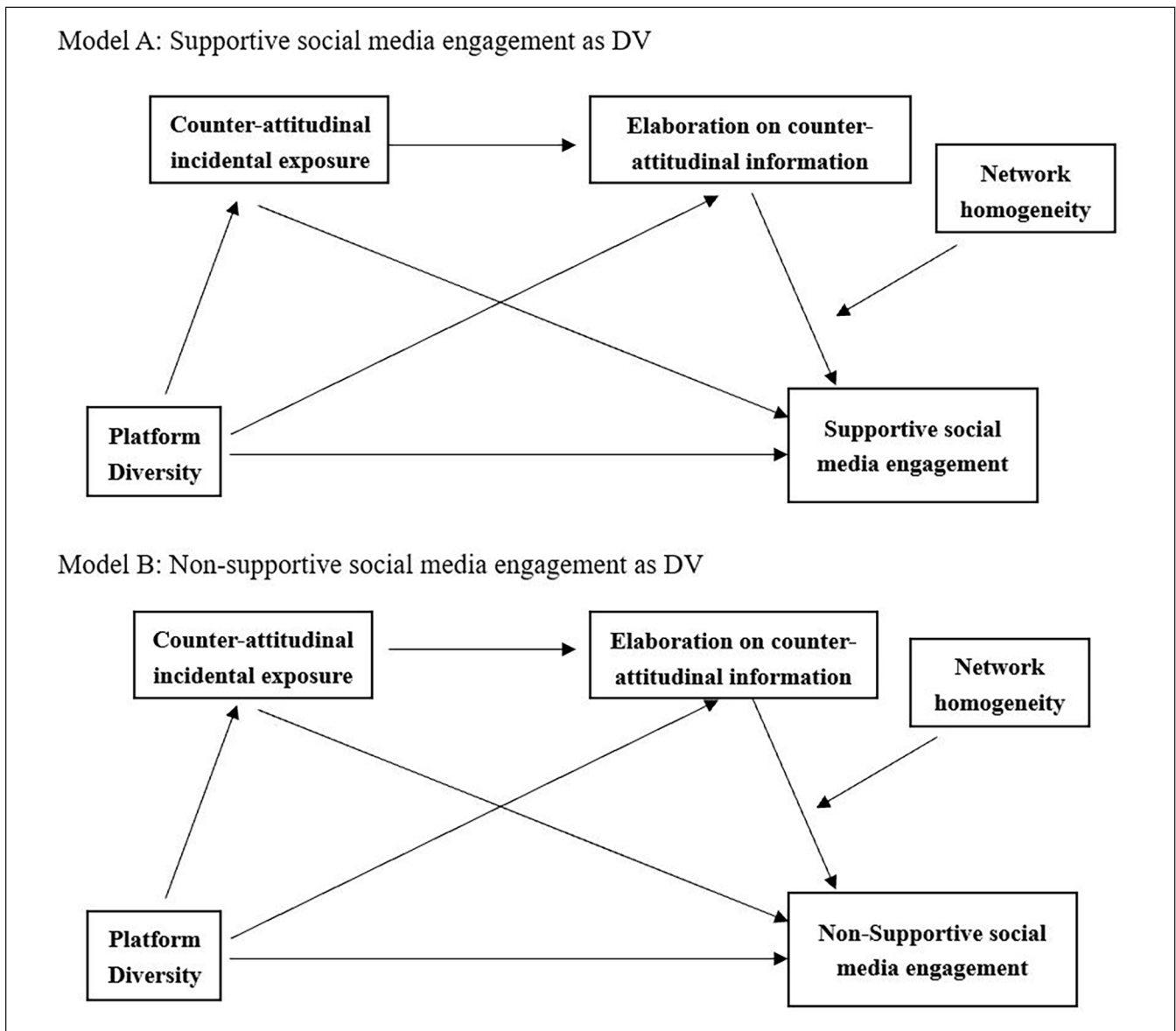
## The Moderating Role of Network Homogeneity

While social media platforms may contain mixed-attitudinal communities where users can be exposed to diversified viewpoints and exchange their ideas freely (Mutz, 2006), most individuals prefer to engage with like-minded social media environments (Stroud, 2010). In this study, social network homogeneity refers to the extent to which users are more likely to be exposed to information that is consistent with their own views within online networks, rather than non-like-minded information (Cargnino, 2021). Social network homogeneity sets the conditions for in-group discussions. More specifically, a more homogeneous online network could increase the strength of one's own opinion, giving rise to "echo chambers" (Luzsa & Mayr, 2019; Sunstein, 2017). On one hand, a homogeneous social network could be the condition under which social in-group favoritism emerges by which people support members of their own group much more than members of other groups (Fu et al., 2012). As in-group bias commonly exists in human nature (Rand et al., 2009), supportive engagement is more likely to be enhanced after one is exposed to cross-cutting information, especially when they perceive themselves to be in a like-minded opinion climate. Such engagement helps users search for self-affirmation and consolidate their in-group identity after cognitive elaboration on disagreeing information. Therefore, high social network homogeneity could strengthen the relationship between cognitive elaboration on counter-attitudinal information and supportive social media news engagement.

On the other hand, network homogeneity affects non-supportive social media news engagement as well because

homogeneous social networks provide a favorable opinion environment that may make participants unable to tolerate disagreement after exposure to and elaboration on the disagreeing information (Huckfeldt et al., 2004). It strengthens the cognitive bias of relative overestimation of public support (i.e., false consensus) and may further motivate individuals to reiterate their own political stance while dismissing or criticizing out-groups' positions because they think they will be fully supported and sponsored by their in-group members (Luzsa & Mayr, 2019). Thus, users' willingness to practice non-supportive social media news

engagement will become stronger. Political discussion among like-minded users is also likely to make a large positive contribution to participation because non-supportive engagement while surrounded by a homogeneous network is considered safe (Eveland & Hively, 2009). Therefore, we assume that after being incidentally exposed to counter-attitudinal views, high social network homogeneity could strengthen the relationship between cognitive elaboration and non-supportive social media news engagement. Taken together, we propose the following moderated mediation models (Figure 1):



**Figure 1.** Moderated mediation model: the indirect effect of multi-platform social media use on news engagement through counter-attitudinal incidental exposure and cognitive elaboration on counter-attitudinal information moderated by network homogeneity.

H4a: The mediation model proposed in H3a is conditionally affected by network homogeneity. More specifically, network homogeneity will strengthen the path from cognitive elaboration on counter-attitudinal information to supportive social media news engagement.

H4b: The mediation model proposed in H3b is conditionally affected by network homogeneity. More specifically, network homogeneity will strengthen the path from cognitive elaboration on counter-attitudinal information to non-supportive social media news engagement.

## Method

### Sampling

The data for this study were collected via an online panel survey of adults in the United States conducted by Qualtrics in February 2018. This study adopted quota sampling so that the sample's gender, age, household income, and education level quotas would match the population features as reported by the US Census. When the quota of the group was reached, respondents in that group were no longer invited to complete the survey. The procedure yielded a total of 1,131 completed and valid responses.

In terms of the demographics, 52.3% of the respondents are female, the average age group is 35–44 years, and the average household income group is US\$50,000 to US\$75,000. The sample includes more highly educated people than the census: 74.5% of the sample has at least an undergraduate degree (see Supplemental Appendix A for detailed information).

### Measurements

**Multi-Platform Social Media Use.** Respondents were asked how many social media sites (such as Facebook or Twitter) they use at least weekly as an indicator of multi-platform use ( $M=1.82$ ,  $SD=1.87$ ). After checking the data, five respondents reported that they use 100 social media platforms weekly. This is not realistic, so we filtered out these cases before conducting further statistical analysis. Therefore, the final sample size of this study was 1,126.

**Social Media News Engagement.** To measure supportive social media news engagement, respondents were asked how often they have been involved in the following six activities on social media platforms on a 5-point scale (1="never"; 5="always"): (1) post positive comments/posts about the political party I belong to; (2) post positive comments/posts about politicians I like; (3) edit positive comments/posts about the political party I belong to; (4) edit positive comments/posts about politicians I like; (5) forward someone else's political commentary I agree with to other people; (6) "like" or promote posts by others that are related to political

or social issues that I support. Responses to the six items were averaged as an index to indicate supportive social media news engagement ( $M=1.73$ ,  $SD=.87$ , Cronbach's  $\alpha=.91$ ).

For non-supportive social media news engagement, respondents were asked how frequently they do the following six activities on social media platforms on a 5-point scale (1="never"; 5="always"): (1) post criticism or news about the political party I consider the other side; (2) post criticism or news about politicians I don't support; (3) edit criticism or news about the political party I consider the other side; (4) edit criticism or news about politicians I don't support; (5) hide or block messages or information from politicians I don't support; (6) hide or block messages or information from the party I consider the other side. Responses to the six items were averaged to form an index of non-supportive social media news engagement ( $M=1.60$ ,  $SD=.79$ , Cronbach's  $\alpha=.89$ ).

**Counter-Attitudinal Incidental Exposure.** Counter-attitudinal incidental exposure was measured by asking respondents to rate their frequency of encountering information accidentally on social media on a 5-point scale (1="never"; 5="always") that (1) disagreed with your political views, (2) was critical of a politician or a political party you support, (3) was favorable toward a politician or a political party you oppose. Responses to the three items were averaged as an index to indicate counter-attitudinal incidental exposure ( $M=3.00$ ,  $SD=.92$ , Cronbach's  $\alpha=.87$ ).

**Cognitive Elaboration on Disagreement.** To measure cognitive elaboration on disagreement, respondents were asked to indicate their level of agreement (1="strongly disagree"; 7="strongly agree") with the following statements when encountering political news, posts, discussion, or comments that they disagree with on social media: "think about the news or discussion," "relate the news or discussion to their own experiences," "recall news and discussion when discussing political issues with others," and "think more about their own opinion after encountering news or discussion." Responses to the items were averaged as an index to indicate cognitive elaboration on disagreement ( $M=3.58$ ,  $SD=1.50$ , Cronbach's  $\alpha=.97$ ).

**Network Homogeneity.** The measurement of network homogeneity was adapted from Luzsa and Mayr's (2019) study. The items do not directly ask about network homophily to prevent social desirability bias. Instead, we measure how often respondents discuss politics on social media with people who (1) share similar opinions, (2) share similar political viewpoints, and (3) support the same politician or party they support. The three items were ranked on a 5-point scale (1="never"; 5="always") and the answers were averaged to form a measure of network homogeneity ( $M=2.26$ ,  $SD=1.20$ , Cronbach's  $\alpha=.97$ ).

**Control Variables.** Demographic characteristics (measurements available in Supplemental Appendix A) like gender

**Table 1.** Regression Analyses in the Mediation Model and Moderated Mediation Model.

	Mediator 1	Mediator 2	Criterion 1		Criterion 2	
	Model 1	Model 2	Model 3	Model 3A	Model 4	Model 4A
Predictors and mediators						
Multi-platform social media use	.04 (.02)**	.07 (.03)**	.07 (.01)***	.04 (.01)***	.05 (.01)***	.03 (.01)*
Mediator 1		.36 (.05)***	.15 (.02)***	.06 (.02)**	.14 (.02)***	.06 (.02)**
Mediator 2			.20 (.02)***	-.05 (.02)*	.15 (.02)***	-.07 (.02)**
Moderator						
Network homogeneity				.07 (.04)		.01 (.04)
Interactions						
Mediator 2 × Network Homogeneity				.08 (.01)***		.08 (.01)***
Control variables						
Age	.04 (.02)*	-.07 (.03)*	.06 (.01)***	.05 (.01)***	.04 (.01)**	.03 (.01)**
Male	.20 (.06)***	-.05 (.09)	.07 (.04)	.03 (.04)	.09 (.04)*	.05 (.04)
Household income	.02 (.02)	.08 (.03)**	.01 (.01)	.01 (.01)	.01 (.01)	.01 (.01)
Education level	.05 (.02)*	.08 (.03)**	-.02 (.02)	-.02 (.01)	-.02 (.02)	-.02 (.01)
Political ideology	-.07 (.02)***	.05 (.03)	.00 (.01)	-.01 (.01)	.01 (.01)	.00 (.01)
White	.20 (.06)	-.22 (.11)*	-.12 (.05)*	-.05 (.04)	-.09 (.05)	-.02 (.05)
General social media use	.08 (.02)***	.24 (.03)***	.13 (.02)***	.05 (.01)***	.11 (.02)***	.05 (.02)**
Social network size	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)
Constant	2.4 (.17)***	1.4 (.28)***	-.17 (.15)	.46 (.13)***	.05 (.14)	.62 (.14)***
R <sup>2</sup>	.06***	.18***	.35***	.59***	.27***	.47***

Note. Mediator 1: Counter-attitudinal incidental exposure; Mediator 2: Elaboration on counter-attitudinal information; Criterion 1: Supportive social media news engagement; Criterion 2: Non-supportive social media news engagement; cell entries are unstandardized coefficient with standard errors in parentheses.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

( $M = .48$ ,  $SD = .50$ ), age ( $M = 4.71$ ,  $SD = 1.63$ ), education level ( $M = 3.71$ ,  $SD = 1.45$ ), household income ( $M = 3.54$ ,  $SD = 1.71$ ), and ethnicity (1 = “White”; 0 = “non-White”;  $M = .78$ ,  $SD = .41$ ), as well as political ideology, general social media use, and social network size, were included as controls. To measure political ideology, respondents were asked “generally speaking, do you usually think of yourself as a Republican, a Democrat, or an Independent?” Answers were ranked on a 7-point scale from 1 = “strongly Republican” to 7 = “strongly Democrat” ( $M = 3.97$ ,  $SD = 1.65$ ). To measure general social media use, respondents were asked to answer the question “On a typical day, how much time do you spend using social media?” using a 1–6 scale (1 = “not at all,” 2 = “about 1 hour,” 3 = “about 2 hours,” 4 = “about 3 hours,” 5 = “about 4 hours,” 6 = “5 hours or more” ( $M = 3.06$ ,  $SD = 1.43$ ). To measure social network size, respondents were asked to provide an approximate number of friends on the social media site that they use most often.

### Statistical Analysis

To test our hypotheses on mediation, we adopted Hayes’ (2013) PROCESS macro Model Template 6. We examined one model for supportive social media news engagement and another for non-supportive social media news engagement given that PROCESS only allows one dependent variable in a mediation model. We employed 10,000 bias-corrected

bootstrap samples and 95% confidence intervals (CIs). Statistical significance ( $p < .05$ ) was achieved when lower bound (LL) and upper bound (UL) CIs do not include zero. To avoid potential confounding effects and provide a more robust analysis, all the controls were included in the analyses. To further test the whole moderated mediation model, we then employed Model Template 87 to allow us to add network homogeneity as the moderator on the path between cognitive elaboration on disagreeing information and supportive/non-supportive social media news engagement.

### Results

Table 1 reports the regression coefficients from PROCESS. The results support H1a and H1b that multi-platform social media use is positively related to both supportive ( $B = .07$ ,  $SE = .01$ ,  $p < .001$ ) and non-supportive ( $B = .05$ ,  $SE = .01$ ,  $p < .001$ ) social media news engagement.

In addition, multi-platform social media use is positively related to counter-attitudinal incidental exposure ( $B = .04$ ,  $SE = .02$ ,  $p < .01$ ), while counter-attitudinal incidental exposure is positively associated with both supportive ( $B = .15$ ,  $SE = .02$ ,  $p < .001$ ) and non-supportive ( $B = .14$ ,  $SE = .02$ ,  $p < .001$ ) social media news engagement. Results from the mediation analysis further demonstrate that counter-attitudinal incidental exposure significantly mediates the effect of multi-platform social media use on supportive social media

**Table 2.** Indirect Effect of Multi-Platform Social Media Use on News Engagement Through Counter-Attitudinal Incidental Exposure and Cognitive Elaboration on Counter-Attitudinal Information Moderated by Network Homogeneity.

Paths	Effect	Boot SE	Boot LLCI	Boot ULCI
Model A: multi-platform social media use → supportive social media engagement				
IV → DVI	.0431	.0103	.0229	.0633
IV → M1 → DVI	.0026	.0014	.0006	.0060
IV → M1 → M2 → DVI				
Network homogeneity = mean - 1 SD	.0007	.0003	.0002	.0014
Network homogeneity = mean	.0022	.0010	.0007	.0047
Network homogeneity = mean + 1 SD	.0038	.0018	.0011	.0080
Model B: multi-platform social media use → non-supportive social media engagement				
IV → DV2	.0267	.0106	.0058	.0476
IV → M1 → DV2	.0027	.0014	.0007	.0061
IV → M1 → M2 → DV2				
Network homogeneity = mean - 1 SD	.0002	.0002	-.0002	.0007
Network homogeneity = mean	.0017	.0008	.0005	.0036
Network homogeneity = mean + 1 SD	.0032	.0015	.0009	.0069

Note. IV: Multi-platform social media use; M1: Counter-attitudinal incidental exposure; M2: Elaboration on counter-attitudinal information; DVI: Supportive social media engagement; DV2: Non-supportive social media engagement; bootstrap resample = 10,000; Estimates were calculated using the PROCESS macro (Model 87). Control variables are included in the analysis.

engagement ( $B = .007$ ,  $SE = .003$ , 95% CI = .0021–.0140) and on non-supportive social media engagement ( $B = .006$ ,  $SE = .003$ , 95% CI = .0019–.0127), supporting H2a and H2b.

H3a and H3b proposed the serial mediation that multi-platform social media use indirectly affects social media news engagement first through counter-attitudinal incidental exposure, then through cognitive elaboration on the counter-attitudinal information. Results show that counter-attitudinal incidental exposure and cognitive elaboration on counter-attitudinal information serially mediate the relationship between multi-platform social media use and supportive ( $B = .003$ ,  $SE = .002$ , 95% CI = .0010–.0067) and non-supportive ( $B = .002$ ,  $SE = .001$ , 95% CI = .0007–.0051) social media news engagement. H3a and H3b were supported.

H4a and H4b proposed a moderating role of network homogeneity in the serial-mediating relationship. The results show that the indirect effect of multi-platform social media use on supportive social media news engagement through counter-attitudinal incidental exposure and cognitive elaboration on counter-attitudinal information is conditionally affected by network homogeneity ( $B = .08$ ,  $SE = .01$ ,  $p < .001$ ), supporting H4a. As shown in Table 2, Model A, the serial-mediating relationship between multi-platform social media use and social media news engagement grows stronger as network homogeneity increases.

The indirect effect of multi-platform social media use on non-supportive social media news engagement through counter-attitudinal incidental exposure and cognitive elaboration on counter-attitudinal information is also conditionally affected by network homogeneity ( $B = .08$ ,  $SE = .01$ ,  $p < .001$ ), supporting H4b. As shown in Table 2, Model B, the indirect effect of multi-platform social media use on non-supportive social media news engagement through

counter-attitudinal incidental exposure and cognitive elaboration on disagreement is not significant if network homogeneity is at a low level. The tested model is visualized in Figure 1.

## Discussion

Engagement with political news on social media platforms has become an essential part of political life as well as the development of civic society. With the diffusion of information communication technology, citizens can easily access different social media platforms to read, share, like/dislike, comment on, and talk about news stories. One school of thought holds an optimistic belief that the pervasiveness of social media could promote engagement with political news, which is deemed an essential element of deliberative democracy. As they are exposed to, elaborate on, and engage with news from diverse viewpoints and political groups on social media, users are expected to exchange views with the opposite party, compromise with each other, and finally reach consensus (Gastil & Dillard, 1999).

However, another school of thought holds a pessimistic view. Although social media users can be exposed to counter-attitudinal news accidentally, such incidental exposure could potentially lead the audience to further support their in-group views and ignore the arguments by opposite groups when users are surrounded by like-minded social networks (Stroud, 2010).

This study revisited the debate and focused on counter-attitudinal incidental exposure that comes from multi-platform social media use. The consequences of cross-cutting exposure are mixed, as it has both deliberative and backfire potential. We examined whether and how incidental



counter-attitudinal exposure enabled by multiple-platform social media use leads to in-group support as well as criticism against out-groups when people engage with news on social media. Our findings suggest that using multiple social media platforms is likely to prompt users to post positive comments on, like, and promote a post to show their in-group support. They are also more likely to post criticisms on, hide, or block opposing views or discussion contents. This finding belies some researchers' optimistic arguments that the growing popularity of social media use is driving democratic ends since it provides opportunities for cross-cutting exposure which could enhance political tolerance (Mutz, 2002). It is possible that with multi-platform social media consumption, users will engage more with the news in a biased manner, which implies a backfire effect of multi-platform social media use.

Multi-platform social media use influences supportive and non-supportive social media engagement not only directly, but also indirectly, first through counter-attitudinal incidental exposure and then through cognitive elaboration on the information. Thus, as users make use of diverse social media platforms, they have more chances to be exposed to counter-attitudinal information and will be more likely to use cognitive resources to elaborate on the information, which will further motivate them to search for self-affirmation by showing in-group support (supportive engagement) and refuting out-groups (non-supportive engagement).

More importantly, we found that the indirect effect of multi-platform social media use on social media news engagement is moderated by network homogeneity. The more homogeneous the social network, the more likely users are to participate in supportive/non-supportive social media news engagement after elaborating on counter-attitudinal information. Previous research has suggested political ambivalence as a possible underlying mechanism for why counter-attitudinal exposure discourages political participation online and offline (Brundidge et al., 2014; Chen & Lin, 2021). However, our findings suggest that if the counter-attitudinal exposure occurs accidentally and prompts elaboration on the information in a perceived homogeneous opinion climate, it will encourage social media users to engage with news in a biased way. It is possible that when incidental counter-attitudinal exposure meets homogeneous social networks, it may encourage biased social media news engagement instead of silencing people.

Theoretically, the results have several implications. First, the findings on the indirect effects could help in understanding the underlying mechanisms of the relationship between multi-platform social media use and social media news engagement with the mediating role of incidental counter-attitudinal exposure and cognitive elaboration on the disagreeing information being highlighted.

Second, we found that network homogeneity plays an important moderating role in the path from cognitive

elaboration to social media engagement, pointing to how homogeneous opinion climate could enhance the likelihood of biased social media news engagement, which could be harmful to the construction of a healthy and democratic cyberspace for political discussions.

Last but not least, echoing previous studies on the concept of social media news engagement (Chan et al., 2018; Steensen et al., 2020), this study goes beyond the general picture of user behaviors that can be traced online by specifying two distinct normative dimensions of engagement (i.e., supportive and non-supportive). We believe such efforts could enrich the understanding of the different aspects of social media news engagement and how it works.

Nevertheless, the findings cannot be interpreted without limitations. First, by analyzing cross-sectional samples, we cannot make definitive claims of the causal relationships. Accordingly, we cannot rule out reverse causality between social media news engagement and the use of multiple social media platforms. It is also possible that increasing willingness to engage with social media news could reversely motivate users to employ more social media platforms. We suggest that future researchers adopt multi-wave panel survey designs to overcome this limitation.

Second, the online panel survey is not a strict random sampling procedure, which limits the generalizability of the results. Although we applied quota sampling to match the sample demographic distributions with the US Census to ease this concern, the participants were more educated than the general population.

Third, multi-platform social media use was measured by the numbers of different social media platforms the respondents used at least weekly. As some platforms are common in nature, using similar platforms with common social networks to read and talk about political news may not result in cross-cutting exposure. Future researchers could re-examine the hypothesized model with an improved measurement of multi-platform social media use by asking respondents to choose from a list of social media platform categories, such as social network sites, short video platforms, and online discussion forums.

Fourth, the self-reported measure of engagement has received criticism, given that it can be biased to meet social expectations and does not reflect a real-world situation (Eveland et al., 2011). Researchers could consider other methods such as experiments to trace the possible change of supportive and non-supportive engagement due to accessing diversified social media platforms.

Despite the limitations, the serial mediation model tested in this study suggests it is not appropriate to be optimistic about the contribution of multi-platform social media use to the development of deliberative democracy. Instead, we found a backfire effect through counter-attitudinal incidental exposure. Consuming diverse platforms will enhance counter-attitudinal incidental exposure, which will further increase users' cognitive elaboration on the disagreeing

information. This, however, promotes social media news engagement to support one's own group as well as counter the opposite parties. As the counter-attitudinal incidental exposure is unwanted (Marcinkowski & Došenović, 2021), especially in a homogeneous social network, exposure to such information may trigger the desire among users to fight for their political stances and community.

The findings of this study point to directions for future research on various dimensions of social media news engagement and highlight that social media use has the potential to impede the formation of a healthy online political discussion atmosphere, which may hinder the development of deliberative democracy.

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### Supplemental Material

Supplemental material for this article is available online.

### References

- Barberá, P. (2020). Social media echo chambers, and political polarization. In N. Persily & J. A. Tucker (Eds.), *Social media and democracy: The state of the field and prospects for reform* (pp. 34–55). Cambridge University Press.
- Beam, M. A., Hutchens, M. J., & Hmielowski, J. D. (2018). Facebook news and (de) polarization: Reinforcing spirals in the 2016 U.S. election. *Information, Communication & Society, 21*(7), 940–958. <https://doi.org/10.1080/1369118X.2018.1444783>
- Boczkowski, P. J., Mitchelstein, E., & Matassi, M. (2018). “News comes across when I’m in a moment of leisure”: Understanding the practices of incidental news consumption on social media. *New Media & Society, 20*(10), 3523–3539. <https://doi.org/10.1177/1461444817750396>
- Brundidge, J. (2010). Encountering “difference” in the contemporary public sphere: The contribution of the Internet to the heterogeneity of political discussion networks. *Journal of Communication, 60*(4), 680–700. <https://doi.org/10.1111/j.1460-2466.2010.01509.x>
- Brundidge, J., Garrett, R. K., Rojas, H., & Gil de Zúñiga, H. (2014). Political participation and ideological news online: “Differential gains” and “differential losses” in a presidential election cycle. *Mass Communication and Society, 17*(4), 464–486. <https://doi.org/10.1080/15205436.2013.821492>
- Cargnino, M. (2021). The interplay of online network homogeneity, populist attitudes, and conspiratorial beliefs: Empirical evidence from a survey on German Facebook users. *International Journal of Public Opinion Research, 33*(2), 337–353. <https://doi.org/10.1093/ijpor/edaa036>
- Chan, M., Chen, H.-T., & Lee, F. L. (2018). Examining the roles of political social network and internal efficacy on social media news engagement: A comparative study of six Asian countries. *The International Journal of Press/Politics, 24*(2), 127–145. <https://doi.org/10.1177/1940161218814480>
- Chen, H.-T., Kim, Y., & Chan, M. (2022). Just a glance, or more? Pathways from counter-attitudinal incidental exposure to attitude (de)polarization through response behaviors and cognitive elaboration. *Journal of Communication, 72*(1), 83–110. <https://doi.org/10.1093/joc/jqab046>
- Chen, H.-T., & Lin, J.-S. (2021). Cross-cutting and like-minded discussion on social media: The moderating role of issue importance in the (de) mobilizing effect of political discussion on political participation. *Journal of Broadcasting & Electronic Media, 65*(1), 135–156. <https://doi.org/10.1080/088838151.2021.1897822>
- Cho, J., Shah, D. V., McLeod, J. M., McLeod, D. M., Scholl, R. M., & Gotlieb, M. R. (2009). Campaigns, reflection, and deliberation: Advancing an O-S-R-O-R model of communication effects. *Communication Theory, 19*(1), 66–88. <https://doi.org/10.1111/j.1468-2885.2008.01333.x>
- Diehl, T., Barnidge, M., & Gil de Zúñiga, H. (2019). Multi-platform news use and political participation across age groups: Toward a valid metric of platform diversity and its effects. *Journalism & Mass Communication Quarterly, 96*(2), 428–451. <https://doi.org/10.1177/1077699018783960>
- Dimitrova, D. V., Shehata, A., Strömbäck, J., & Nord, L. W. (2014). The effects of digital media on political knowledge and participation in election campaigns: Evidence from panel data. *Communication Research, 41*(1), 95–118. <https://doi.org/10.1177/0093650211426004>
- Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitude*. Harcourt, Brace, & Jovanovich.
- Edwards, K., & Smith, E. E. (1996). A disconfirmation bias in the evaluation of arguments. *Journal of Personality and Social Psychology, 71*(1), 5–24. <https://psycnet.apa.org/doi/10.1037/0022-3514.71.1.5>
- Eveland, W. P., Jr. (2002). News information processing as mediator of the relationship between motivations and political knowledge. *Journalism & Mass Communication Quarterly, 79*(1), 26–40. <https://doi.org/10.1177/107769900207900103>
- Eveland, W. P., Jr., & Hively, M. H. (2009). Political discussion frequency, network size, and “heterogeneity” of discussion as predictors of political knowledge and participation. *Journal of Communication, 59*(2), 205–224. <https://doi.org/10.1111/j.1460-2466.2009.01412.x>
- Eveland, W. P., Jr., Morey, A. C., & Hively, M. H. (2011). Beyond deliberation: New directions for the study of informal political conversation from a communication perspective. *Journal of Communication, 61*(6), 1082–1103. <https://doi.org/10.1111/j.1460-2466.2011.01598.x>
- Fu, F., Tarnita, C. E., Christakis, N. A., Wang, L., Rand, D. G., & Nowak, M. A. (2012). Evolution of in-group favoritism. *Scientific Reports, 2*(1), 1–6.

- Gastil, J., & Dillard, J. P. (1999). Increasing political sophistication through public deliberation. *Political Communication, 16*(1), 3–23. <https://doi.org/10.1080/105846099198749>
- Gil de Zúñiga, H., Borah, P., & Goyanes, M. (2021). How do people learn about politics when inadvertently exposed to news? Incidental news paradoxical Direct and indirect effects on political knowledge. *Computers in Human Behavior, 121*, Article 106803. <https://doi.org/10.1016/j.chb.2021.106803>
- Gil de Zúñiga, H., Strauss, N., & Huber, B. (2020). The proliferation of the “news finds me” perception across societies. *International Journal of Communication, 14*, 1605–1633.
- Gottfried, J., & Shearer, E. (2016). *News use across social media platforms 2016*. Pew Research Center. <http://www.journalism.org/2016/05/26/news-use-across-social-media-platforms-2016/>
- Guess, A., & Coppock, A. (2020). Does counter-attitudinal information cause backlash? Results from three large survey experiments. *British Journal of Political Science, 50*(4), 1497–1515. <https://doi.org/10.1017/S0007123418000327>
- Ha, L., Xu, Y., Yang, C., Wang, F., Yang, L., Abuljadail, M., Hu, X., Jiang, W., & Gabay, I. (2018). Decline in news content engagement or news medium engagement? A longitudinal analysis of news engagement since the rise of social and mobile media 2009–2012. *Journalism, 19*(5), 718–739. <https://doi.org/10.1177/1464884916667654>
- Haim, M., Graefe, A., & Brosius, H.-B. (2018). Burst of the filter bubble? Effects of personalization on the diversity of Google News. *Digital Journalism, 6*(3), 330–343. <https://doi.org/10.1080/21670811.2017.1338145>
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Press.
- Huckfeldt, R., Mendez, J. M., & Osborn, T. (2004). Disagreement, ambivalence, and engagement: The political consequences of heterogeneous networks. *Political Psychology, 25*(1), 65–95. <http://www.jstor.org/stable/3792524>
- Kim, Y., Chen, H.-T., & Gil de Zúñiga, H. (2013). Stumbling upon news on the Internet: Effects of incidental news exposure and relative entertainment use on political engagement. *Computers in Human Behavior, 29*(6), 2607–2614. <https://doi.org/10.1016/j.chb.2013.06.005>
- Knobloch-Westerwick, S., & Meng, J. (2011). Reinforcement of the political self through selective exposure to political messages. *Journal of Communication, 61*(2), 349–368. <https://doi.org/10.1111/j.1460-2466.2011.01543.x>
- Kümpel, A. S. (2020). The Matthew Effect in social media news use: Assessing inequalities in news exposure and news engagement on social network sites (SNS). *Journalism, 21*(8), 1083–1098. <https://doi.org/10.1177%2F1464884920915374>
- Lee, J. K., Choi, J., Kim, C., & Kim, Y. (2014). Social media, network heterogeneity, and opinion polarization. *Journal of Communication, 64*(4), 702–722. <https://doi.org/10.1111/jcom.12077>
- Luzsa, R., & Mayr, S. (2019). Links between users’ online social network homogeneity, ambiguity tolerance, and estimated public support for own opinions. *Cyberpsychology, Behavior, and Social Networking, 22*(5), 325–329. <https://doi.org/10.1089/cyber.2018.0550>
- Marcinkowski, F., & Došenović, P. (2021). From incidental exposure to intentional avoidance: Psychological reactance to political communication during the 2017 German national election campaign. *New Media & Society, 23*(3), 457–478. <https://doi.org/10.1177%2F1461444820902104>
- Mosseri, A. (2018). *News feed FYI: Bringing people closer together*. <https://newsroom.fb.com/news/2018/01/news-feed-fyi-bringingpeople-closer-together/>
- Mutz, D. C. (2002). Cross-cutting social networks: Testing democratic theory in practice. *American Political Science Review, 96*(1), 111–126.
- Mutz, D. C. (2006). *Hearing the other side: Deliberative versus participatory democracy*. Cambridge University Press.
- Nyhan, B., & Reifler, J. (2010). When corrections fail: The persistence of political misperceptions. *Political Behavior, 32*(2), 303–330. <https://doi.org/10.1007/s11109-010-9112-2>
- Oeldorf-Hirsch, A. (2018). The role of engagement in learning from active and incidental news exposure on social media. *Mass Communication and Society, 21*(2), 225–247. <https://doi.org/10.1080/15205436.2017.1384022>
- Oeldorf-Hirsch, A., & Sundar, S. S. (2015). Posting, commenting, and tagging: Effects of sharing news stories on Facebook. *Computers in Human Behavior, 44*, 240–249. <https://doi.org/10.1016/j.chb.2014.11.024>
- Park, C. S., & Kaye, B. K. (2018). News engagement on social media and democratic citizenship: Direct and moderating roles of curatorial news use in political involvement. *Journalism & Mass Communication Quarterly, 95*(4), 1103–1127. <https://doi.org/10.1177/1077699017753149>
- Pew Research Center. (2019). *Digital news fact sheet*. <https://www.journalism.org/fact-sheet/digital-news/>
- Picone, I., Courtois, C., & Paulussen, S. (2015). When news is everywhere: Understanding participation, cross-mediality and mobility in journalism from a radical user perspective. *Journalism Practice, 9*(1), 35–49. <https://doi.org/10.1080/17512786.2014.928464>
- Quandt, T. (2018). Dark participation. *Media and Communication, 6*(4), 36–48. <https://doi.org/10.17645/mac.v6i4.1519>
- Quinn, J. M., & Wood, W. (2004). Forewarnings of influence appeals: Inducing resistance and acceptance. In E. S. Knowles & J. A. Linn (Eds.), *Resistance and persuasion* (pp. 193–213). Lawrence Erlbaum.
- Rand, D. G., Pfeiffer, T., Dreber, A., Sheketoff, R. W., Wernerfelt, N. C., & Benkler, Y. (2009). Dynamic remodeling of in-group bias during the 2008 presidential election. *Proceedings of the National Academy of Sciences of the United States of America, 106*(15), 6187–6191. <https://doi.org/10.1073/pnas.0811552106>
- Shahin, S., Saldaña, M., & Gil de Zúñiga, H. (2021). Peripheral elaboration model: The impact of incidental news exposure on political participation. *Journal of Information Technology & Politics, 18*(2), 148–163. <https://doi.org/10.1080/19331681.2020.1832012>
- Stavrositu, C., & Sundar, S. S. (2012). Does blogging empower women? Exploring the role of agency and community. *Journal of Computer-Mediated Communication, 17*(4), 369–386. <https://doi.org/10.1111/j.1083-6101.2012.01587.x>
- Steensen, S., Ferrer-Conill, R., & Peters, C. (2020). (Against a) theory of audience engagement with news. *Journalism Studies, 21*(12), 1662–1680. <https://doi.org/10.1080/1461670X.2020.1788414>

- Stroud, N. J. (2010). Polarization and partisan selective exposure. *Journal of Communication, 60*(3), 556–576. <https://doi.org/10.1111/j.1460-2466.2010.01497.x>
- Sunstein, C. R. (2017). *#Republic: Divided democracy in the age of social media*. Princeton University Press.
- Taber, C. S., & Lodge, M. (2006). Motivated skepticism in the evaluation of political beliefs. *American Journal of Political Science, 50*(3), 755–769. <https://www.jstor.org/stable/3694247>
- Taneja, H., Webster, J. G., Malthouse, E. C., & Ksiazek, T. B. (2012). Media consumption across platforms: Identifying user-defined repertoires. *New Media & Society, 14*(6), 951–968. <https://doi.org/10.1177/1461444811436146>
- Wen, N., & Wei, R. (2018). Examining effects of informational use of social media platforms and social capital on civic

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