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Birds of a Feather Get Angrier Together: Social Media News Use and Social Media Political Homophily as Antecedents of Political Anger

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Abstract

A significant body of literature within political communication revolves around the constructive political virtues and blighting social and democratic consequences of political anger. For the most part, studies have focused on identifying the primary causes and antecedents of political anger. However, within the context of social media, fewer efforts have been devoted to clarifying how and what infuriates people about politics. Does social media news use relate to increased or reduced levels of political anger? Do social media political homophilic networks explain political anger? And to what extent does political homophily influence the potential effect of social media news use on citizens' political anger levels—moderating effect? Results drawing on a two-wave U.S. survey dataset show that the frequency of social media news use alone has no direct effect on people's increased political anger, whereas interacting in homophilic discussion and information networks on social media positively associates with anger. Furthermore, the relationship between social media news use and political anger is contingent upon social media political homophily. Those who report high levels of social media news use and very low levels of social media political homophily end up being less angry over time. Limitations and steps for future research are discussed in the manuscript.

Keywords Political anger · Social media news use · Social media political homophily · Echo chambers

Anger is a pervasive emotion with a central role in the political realm (Ost, 2004). While there is abundant research exploring the general causes and antecedents of political anger (MacKuen et al., 2010; Mullen & Skitka, 2006; Petersen & Zukerman, 2010; Redlawsk et al., 2007; Rico et al., 2020), only a few studies examine its antecedents in the context of social media (e.g., Wagner & Boczkowski, 2019;

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Wahl-Jorgensen, 2018). This gap is far from irrelevant given the importance of social media interactions to shape political attitudes in contemporary politics (Bail et al., 2018; Hoewe & Peacock, 2020; Zhang et al., 2010).

In the past decade, research has explored whether social media promotes an open and diverse public sphere or rather serves as an "echo chamber," where individuals radicalize previous opinions (Colleoni et al., 2014). Overall, empirical research has shown that echo chamber and polarization effects exist and are indeed more likely to happen when the diversity of opinions is scarce (e.g., Garrett, 2009; Iyengar et al., 2019; Knobloch-Westerwick & Meng, 2009; Stroud, 2010; Vaccari et al., 2016). In other words, echo chamber, polarization, and political anger can be closely related phenomena because whenever people inhabit a political self-bubble on social media, they are less likely to listen to diverse opinions and, consequently, more likely to feel hostile towards the opposing others (Gillani et al., 2018). However, social media also curate specific means for people to generate heterogeneous political networks if they are interested in doing so (Conover et al., 2011), as exemplified by research on the effects that social media news use has on the diversification of information (Choi & Lee, 2015; Kim, 2011). Following this duality, this paper focuses on *when* and if so, *how* social media news and social media political homophily explain political anger.

The main results of this paper, which build upon a two-wave panel survey conducted in the United States (U.S.), suggest that social media news use alone does not have a significant association with political anger. However, social media political homophily is directly and positively associated with political anger. Likewise, political homophily moderates the extent to which social media news use and anger are linked. That is, those who report high levels of social media news use and very low levels of social media political homophily show lower levels of political anger over time.

Political Anger, Social Media News Use, and Political Homophily

Although there is no thorough agreement in the literature on what anger means, the term is often used in social science research to refer to an emotion that carries on ideas of "displeasure" and "antagonism" (Lindebaum & Geddes, 2016). As such, individuals can feel angry about very different situations/objects/actors, and of course, being angry about politics is part of this repertoire (McQuarrie, 2017). Within this context, political anger involves an attribution of blame and a desire to alleviate one's frustration that motivates individuals to act against the target of one's anger and take political actions (Holmes, 2004). Anger as a righteous political emotion can be viewed as a legitimate response to social injustice (Lyman, 2004), and studies have found that political anger promotes electoral participation (Magni, 2017; Vasilopoulos et al., 2019) and protests (Banks et al., 2019). However, political anger also makes individuals more likely to consume congenial news bolstering prior views and orientations (Suhay & Erisen, 2018), using uncivil messages (Gervais, 2017), or even recurring to violence (Petersen & Zukerman, 2010; Wright-Neville & Smith, 2009). The importance and ambivalence of political anger largely

explain scholars' interest in it, which is well reflected in contemporary debates about whether political anger flourishes in online environments and social media in particular (Webster, 2020).

Once a subsidiary source of information for people, the internet is nowadays among the most popular places to get news, a trend that is closely connected to the increased salience of social media. Empirical data from the U.S. evidence shows that around 50% of the population gets news from social media with some regularity, and the figures could be even starker among Europeans, especially younger generations (Walker & Matsa, 2021; Newman et al., 2022). While it seems uncontroversial to say that using social media for news is a fairly common behavior, the relevant part of the puzzle for this research is the extent to which this usage can be associated with political anger. For that, we pay attention to the specific environment in which individuals interact online, concentrating on the role of social media political homophily.

In a broader sense, political homophily is a term first introduced and popularized by sociologists McPherson et al. (2001, 2021), which refers to a situation in which people with similar social and psychological characteristics tend to interact more. Applied to online environments, the concept has gained in popularity and is used frequently to analyze the propensity to interact with similarly minded people in social media (Gillani et al., 2018). First, evidence exists to defend that using social media for news exposes individuals to heterogeneous information and networks of discussion, partly due to the connectivity potential of social media (Choi & Lee, 2015; Kim, 2011; Lee et al., 2014). However, there is also a growing body of literature recognizing that social media news use leads to more homogeneous environments (Cinelli et al., 2021; Conover et al., 2011; Jacobson et al., 2016; Nelson & Webster, 2017; Weng et al., 2013). In this study, we operationalize social media political homophily as the purposeful convergence of homogenous networks of interpersonal discussion (Eveland & Hively, 2009), and ideologically congenial selective exposure (Stroud, 2010), registering the deliberate and conscious way through which people tend to foster and rely on information and discussion self-bubble of content aligned with their political views (Gil de Zúñiga et al., 2022). Therefore, whether and the extent to which an online forum is homophilic is an open empirical question that depends on the features of both the individuals and their interactions online and on social media (Colleoni et al., 2014; Boutyline & Willer, 2017; Bond & Sweitzer, 2018), and thus political homophily cannot be assumed to occur across all citizens equally, even less to dominate online environments (Guess, 2021). Accordingly, we focus on the effects that different levels of social media political homophily have on political anger.

Overall, the consumption of pro-attitudinal information, which is more likely in more homophilic networks, associates with higher levels of inter-group hostility (Garrett et al., 2014; Hasell & Weeks, 2016; Lau et al., 2017; Lu & Lee, 2019; Yarchi et al., 2021; Zhu et al., 2021). Basically, the more people interact on social media with similarly minded people and consume information that is aligned with previous attitudes, the more they build up the boundaries that separate in-group and out-group, increasing social sorting (Settle, 2018). In turn, social sorting contributes to political anger by making people more reactive to
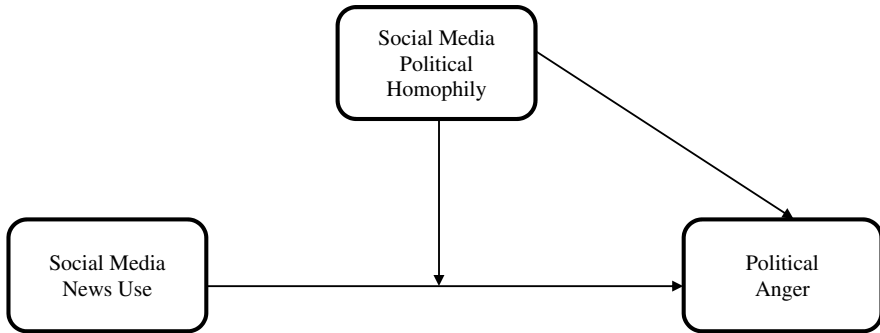
Fig. 1 Proposed theoretical model of direct and moderating effects of social media news use, social media political homophily, and political anger

group-threat (Arpan & Nabi, 2011; Mason, 2016; Rydell et al., 2008). Furthermore, both general levels of political homophily and specific types of social sorting like partisanship have related to polarization (Kim, 2015; Levendusky, 2013; Stroud, 2010), which also explains higher levels of political anger (Lau et al., 2017; Simas et al., 2020). Last, people belonging to a homogeneous social group will further seek out more like-minded individuals or information to make them feel they are contributing to the argument pool within the group (Stroud, 2010). This type of network diminishes exposure to cross-cutting political talks, which triggers discomfort towards disagreeing political beliefs (Mutz, 2007), decreases empathy (Wojcieszak, 2010), and increases negative attitudes towards outgroup members (Iyengar et al., 2019).

Considering that no study has examined the direct link between the sheer frequency of social media news use and political anger, together with the lack of clear expectations about the association, we first ask: *What is the general relationship between social media news use and political anger?* (RQ1). Furthermore, and building upon the theory expectations referred to above, we propose a hypothesis that reflects our theoretical expectations: *Higher levels of social media political homophily will associate with higher levels of political anger* (H1), and ask a second research question: *Does the effect of social media news on political anger differ across different levels of social media political homophily* (RQ2)*? An original collection of a two-wave panel U.S. survey data allows us to test these arguments that consider the direct effects of social media news use and social media political homophily as well as the interaction between them (see Fig. 1).

Data and Methods

Data

Our study builds upon data from a two-wave survey panel conducted in the U.S. in June 2019 (first wave [W1], N = 1338; COOP2 = 45.2%) and October 2019 (second wave [W2], N = 511; COOP2 = 40.9%).[1] That is, 511 of the individuals who responded to the first wave of our questionnaire also participated in the second one. Although we were not interested in calculating population estimates (Baker et al., 2010), and given that shortcomings associated with nonprobability sampling online exist (Kaye & Johnson, 1999; Van Selm & Jankowski, 2006), our study utilized a quota sampling strategy to reflect key demographic aspects of the U.S. census, such as education, gender, and income. IPSOS Europe, an international poll research company, was commissioned to recruit respondents for the survey from a massive subject panel the company curates. The questionnaires were administered under the supervision of the Principal Investigator via Qualtrics at (name withheld to preserve anonymity) University. Our questionnaire contained different items to measure key variables and controls using composite indexes.[2] If not otherwise stated, indexes were measured on a 1-to-10 Likert scale that was the result of averaging the corresponding items.

Our *dependent variable*, political anger, is the average of the two following questions: 'Today, politics, for the most part, makes me angry,' and 'I am angry about the political direction the government is taking' (W1 ρ = .80, M = 6.82, SD = 2.41; W2 ρ = .84, M = 7.09, SD = 2.40).[3]

Our main *independent variables* are *social media news use* and *social media political homophily*. Social media news use consisted of 13 items. Sample questions included the frequency of social media use to get local and national news, to 'stay informed about current events and public affairs,' to 'stay informed about my local community,' and the frequency of use of different social media platforms to get news, such as Facebook, Twitter, Snapchat, LinkedIn, WhatsApp, and Instagram, and two specific questions about the use of WhatsApp to get information about what is going on in politics and public affairs (See specific items and questionnaire in the Online Appendix, W1 Cronbach's α = .91, M = 3.6, SD = 2.1).

In order to measure social media political homophily, we used the average of three questions: 'When I am online or on social media, I tend to consume content,

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[1] Cooperation rates (COOP) are here defined as "The proportion of all cases interviewed of all eligible units ever contacted." (AAPOR, 2016). Different methods are available to calculate cooperation rates according to the standards of the American Association of Public Opinion Research (AAPOR). We report COOP2, which takes into account both complete and partial interviews as respondents (AAPOR, 2016, p. 63).

[2] The questionnaire items for key variables and control variables are included in Online Appendix.

[3] We used the Spearman-Brown coefficient (ρ) instead of Cronbach α to report the reliability of political anger because α underestimates the reliability of two-item constructs. As inter-item correlation increases, the Spearman-Brown becomes more precise, and the underestimation of Cronbach's α becomes more substantial. See Brown (1910), Eisinga et al. (2013) and Stanley (1971) to learn more.

specifically news and political discussions, that is aligned with my viewpoints,' 'I live in my own bubble online or on social media, mostly connecting with people like myself and looking for opinions I agree with,' and 'When I am online or on social media, I tend to avoid exposure to content, specifically news and political discussions, that is not aligned with my view' (See Online Appendix, W1 Cronbach's α = .73, M = 5.3, SD = 2.1).

In order to clarify the relationships between our key variables, we controlled *for political ideology* using two questions (W1 ρ = .86, M = 6.45, SD = 2.79) and *political interest* (W1 ρ = .89, M = 6.1, SD = 2.7). We also controlled for the *size of the discussion network* face-to-face and via the internet or social networks (2 items, W1 ρ = .32, M = 4.7, SD = 18.8), the frequency of *online political discussion* tapping into discussion with strong ties and weak ties, agreeable discussion, heterogeneous discussion and uncivil discussion (12 items, W1 Cronbach's α = .94, M = 2.9, SD = 2.3), and a thorough construct for *traditional news consumption* including TV news, printed news, online news and radio news (14 items,[4] W1 Cronbach's α = .87, M = 4.5, SD = 1.9). Last, we included demographic controls such as *age* (continuous), *gender* (female as reference), *race* (white as reference), *education*, and *income*.[5]

Methods

This study used a U.S. panel survey which allowed us to achieve a fine-grained analysis of the association between social media political homophily and political anger, as we had the same measures of our variables for the same respondents, at two different time frames. Delving into this vein and scrutinizing the effects of social media political homophily and social media news use (alone and in combination) on political anger, we implemented three ordinary least squares (OLS) regression models. Our first model is a cross-sectional regression that takes all data from the first wave of the survey (W1). The second model measures political anger at *t2* (W2) and includes a lagged version of all covariates from *t1* (W1). The third and last model is autoregressive, which means that political anger at t1 (W1) is included as a predictor of political anger at t2 (W2). Autoregressive models are a rigorous way to test the

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[4] In the past month, how often did you get news from the following media sources? 1. Network TV news (e.g., ABC, CBS, NBC); 2. Local television news (cf. local affiliate stations); 3. MSNBC cable news; 4. CNN cable news; 5. FOX cable news; 6. Television; 7. National newspapers (e.g., *The New York Times*, *The Washington Post*, *USA Today*); 8. Local newspapers (e.g., *The Oregonian*, *Houston Chronicle*, *The Miami Herald*); 9. Printed; 10. Online news sites (e.g., Politico, VOX, BuzzFeed); 11. Citizen journalism sites (e.g., GroundReport, CNN's iReport); 12. Local news online sites (online sites related to news in your local community); 13. Radio news (e.g., NPR, talk shows); 14. Radio.

[5] This is the distribution for our sociodemographic controls in W1. Age: 7% between 18 and 22 years old; 32.3% between 25 and 35 years old; 39.8% between 36 and 55 years old; 28.1% 56 or older. Gender: 53.1% female; 46.6% male; 0.22% other. Race: 74% white; 26% other. Education: Less than high school: 4%, High school: 31%, Some college: 25%, Bachelor's degree: 12%, Some graduate education: 7%, Professional certificate: 4%, Master's degree: 16%, Doctoral degree: 2%. Income:12% 0 to $14,999; 10% $15,000 to $24,999; 21% $25,000 to $49,999; 33% $50,000 to $99,999; 16% $100,000 to $149,999; 5% $150,000 to $199,999; 4% $200,000 or more.

relationship between variables, as they consider that prior levels of the dependent variable are likely to be the main predictor shortly afterward—four months after our initial study. Small effects among the remaining covariates included in autoregressive models are expected in this framework (Adachi & Willoughby, 2015), which should be taken into account for the interpretation of results.

Results

We included two main tables in this section to respond to our two research questions and test our hypothesis. Table 1 illustrates the direct effects of social media news use and social media political homophily on political anger. Table 2 shows the effects examining the interaction between social media news use and social media political homophily, further testing whether the effect of social media news use on political anger is dependent on social media political homophily.

The results shown in Table 1 suggest that there is no direct connection between using social media to get news and political anger (RQ1). This is in line with prior inconclusive results obtained in comparative terms for this relationship, and further justifies our approach considering social media political homophily alone (H1), and in combination with social media news use (RQ2).

In relation to our first hypothesis, we found a consistent across-models relationship between social media political homophily and political anger: individuals who actively create more homogeneous discussion and information networks online and on social media display higher levels of political anger, supporting H1. A graphical representation of these results is also illustrated in Fig. 2. Importantly, the coefficient is significant in the autoregressive model despite the stringency of the model ($\beta = .098$, $p < .05$). Among the controls, age and political interest are positively correlated with political anger (i.e., the older the respondent and the more interested they are in politics, the higher the levels of political anger).[6] Online political discussion positively associates with political anger in the autoregressive model, and political ideology is statistically linked with political anger in all three models, with democrats displaying higher levels of political anger. All remaining controls have no clear effect on the dependent variable.

The interaction term between social media news use and social media political homophily, shown in Table 2, examines the relationship proposed in RQ2. The interaction term is positive and statistically significant. We included a graphical representation of the results to ease the interpretation in Fig. 3. In response to RQ2, we find that there is a: (a) cross-sectional, (b) time-lagged, and (c) panel autoregressive, divergent positive interaction effect of social media political homophily (M) on the relationship between social media news use (X) and political anger (Y). Accordingly, our results highlight that political anger is lower for high social media news users provided that levels of social media homophily are low (see Fig. 3).

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[6] The positive coefficient of political interest on political anger is somehow unexpected, considering previous research on the field (Pinquart, 2001; Schieman, 1999).

Table 1 Cross-sectional, lagged, and autoregression models estimating social media political homophily effects on political anger

	Political anger (W1 cross-sectional)	Political anger (W2 lagged)	Political anger (W2 autoregressive)
Block 1: Autoregressive term			
Political anger	–	–	.451***
ΔR^2			28.8%
Block 1: Demographics			
Age	.091*	.193***	.173***
Gender (1 = female)	.082**	.034	− .001
Education	− .011	.053	.050
Income	.024	− .005	− .001
Race (1 = white)	.107***	− .041	− .086
ΔR^2 (%)	4.1%	5.7%	3.6%
Block 2: Political antecedents			
Political ideology (1 = Republican)	− .220***	− .208***	− .100*
Political interest	.240***	.264***	.172***
ΔR^2 (%)	11.3%	11.5%	2.9%
Block 3: Media antecedents			
Network size	− .012	− .032	− .036
Online political discussion	− .001	.121	.112*
ΔR^2 (%)	0.1%	1.0%	0.6%
Block 4: News consumption			
Traditional news	.070	.001	− .072
Social media news	− .067	− .073	− .028
ΔR^2 (%)	0.3%	0.1%	0.2%
Block 5: Variable of interest			
SM political homophily	.152***	.148**	.098*
ΔR^2 (%)	1.9%	1.8%	0.8%
Total R^2	17.6%	20.0%	36.9%

Sample-W^1 = 1338; Sample-W^2 = 511. Cell entries are final-entry ordinary least squares (OLS) standardized Beta (β) coefficients

*p < .05; **p < .01; ***p < .001

Discussion

Anger is an important political emotion that holds an ambivalent relationship with democracy. While it may serve the powerless to question the political order (Lyman, 2004) and trigger constructive politics before conflicts escalate (Tagar et al., 2011), political anger is also associated with biased assimilation, fueling ideological bias in the acceptance of political information that aligns with one's opinion (Weeks, 2015). Anger also relates to reliance on pre-existing heuristics and stereotypes (Suhay & Erisen, 2018), increased incivility, hostility, and distrust (Hasell & Weeks, 2016),

Table 2 Cross-sectional, lagged, and autoregressive interaction effects between social media political homophily and social media news use

	Political anger[w1] (cross.)	Political anger[w2] (lagged)	Political anger[w2] (autoregressive)
Block 1: All prior blocks Table 1			
ΔR^2	17.6	20.0	36.9
Block 2: Interaction term			
SM political homophily[W1]*SM news use[W1]	.045**	.063*	.059*
ΔR^2	0.7	0.9	0.8
Total R^2	18.3	20.9	37.7

Estimates are unstandardized coefficients. Standardized errors between brackets. Interaction accounted for robust standard errors test based on bootstrapping to 5000 resamples with biased corrected confidence to assess statistical significance. The effects account for the same demographic, political antecedents and media orientations control variables as found in Table 1. Sample-W^1=1338; Sample-W^2=511

*p<.05; **p<.01; ***p<.001
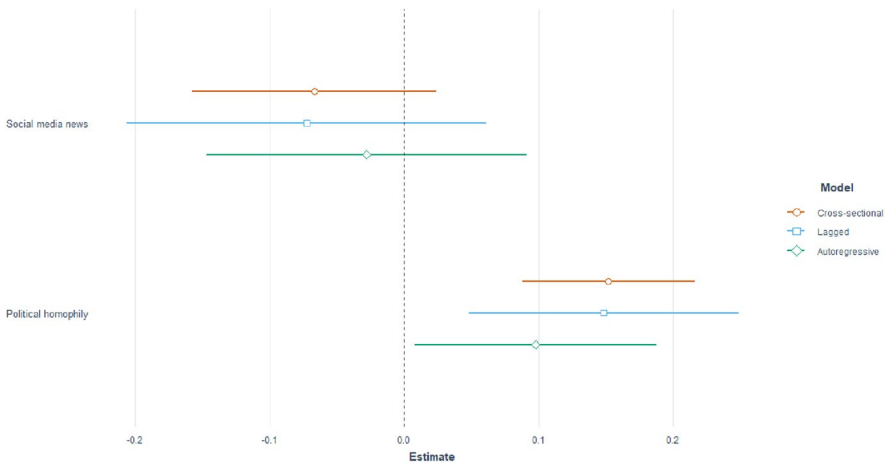
Fig. 2 Direct effects of social media news use and social media political homophily on political anger. Symbols are standardized regression coefficients. Bars represent confidence intervals (95%)

less willingness to compromise (Mackuen et al., 2010; Wollebæk et al., 2019), and even with violence (Claassen, 2016). Acknowledging the wide range of consequences associated with political anger, this study focused on its social media roots.

Our analysis shows the importance of considering social media political homophily to understand political anger in online environments. Higher levels of social media political homophily do not only associate with political anger, but they also moderate the oftentimes empirically elusive relationship between social media news use and political anger. While social media news use does not contribute to explaining political anger directly, individuals who rank low on social media political
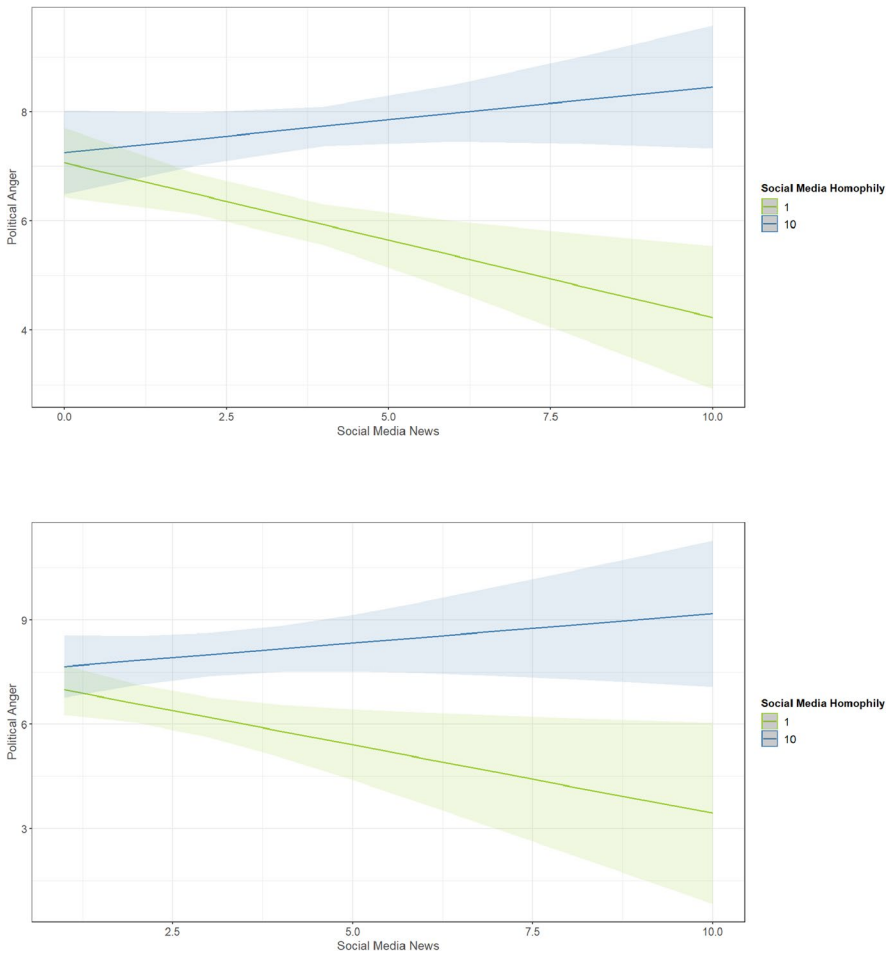
Fig. 3 Interaction effect between social media political homophily and social media news use on political anger in cross sectional, lagged and autoregressive models. This figure is based on the models presented in Table 2. Confidence intervals at 95%

homophily will be less angry about politics the more they use social media to consume information about public affairs. More importantly, the direct and moderating effect of social media political homophily on political anger is consistent across all models tested in this study: cross-sectional, lagged, and autoregressive.

Plenty of research has considered whether social media use would produce more homogeneous (Adamic & Glance, 2005; Conover et al., 2011; Feller et al., 2011) or heterogeneous (Choi & Lee, 2015; Kim, 2011; Lee et al., 2014) online environments. Our findings suggest that these studies are of the highest importance to unravel the association between social media news use and political anger. Our findings also suggest that there is no unified answer to social media news. That is, it is not solely about whether people use social media for news or not, but rather other
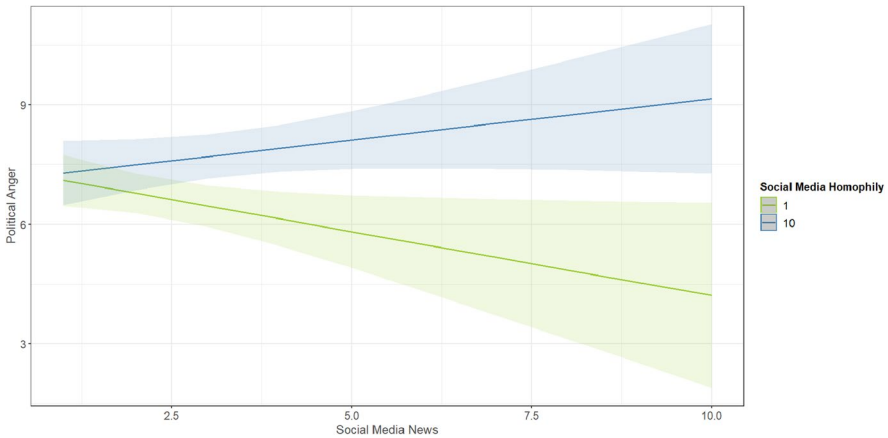
Fig. 3 (continued)

political and communicative predispositions making individuals connect more often with like-minded people and expose themselves to ideologically congruent news. Then, they will be more likely to 'fall victim' to the hyper-partisan news and discussion environments which are featured with blame-attribution, moralization, and identity politics framing (Barberá, 2020; Hameleers et al., 2018; Rydell et al., 2008), thus eliciting negative effects like anger. In other words, how people consume social media and curate their news feed exerts an influence on political anger.

Our results demonstrate that whether social media news use is associated with political anger is contingent upon how the specific informational and discussion affordances that social media also provide, more specifically, whether they actively and purposively curate homophilic or heterogeneous social media news and discussion networks. Cinelli et al. (2021) suggested that aggregation of homophilic users dominates the interaction dynamics on social media like Facebook and users tend to seek information that is consistent with his/her preexisting opinion and favor the interaction with like-minded peers, and this situation leads to the formation of polarized groups online. Alternatively, Dubois and Blank (2018) found that a diverse media diet, including news use on multiple media outlets, will direct social media news users toward more diverse information and perspectives, reducing the likelihood of getting into the echo chamber. Results by Guess (2021) are particularly important in this regard, as he demonstrates that most people, at least in the U.S., interact in relatively heterogeneous environments online. While our paper remains agnostic as to the extent to which online homophily is present, the main results provide support for the idea that social media political homophily, when present, matters not only in the context of creating political segregation (Conover et al., 2011), spreading misinformation (Del Vicario et al., 2016), or strengthening group identity (Yardi & boyd, 2010), but also in explaining political anger.

This study adds some nuance to the understanding of social media news users by connecting social media political homophily, social media news use, and political anger. Prior research has suggested that affective polarization is on the rise in

the U.S. and that some predicting factors, such as selective exposure (Levendusky, 2013; Tsfati & Nir, 2017) and negative political news coverage (Schmuck et al., 2020), may explain that trend. Our study contributes to filling the research gap by looking into the link between social media use patterns and people's emotional responses to politics (i.e., political anger). Drawing on our findings, promoting a more heterogeneous social media news use and discussion network can provide an alternative pathway to reducing political anger in the American public. Although political anger has been found to mobilize the public and stimulate political actions, it increases incivility and hostility (Hasell & Weeks, 2016), causes political violence (Claassen, 2016), and exacerbates partisanship and political polarization (Huber et al., 2015). Our results suggest that by altering how individuals engage with social media news people may become less angry, which may trigger a subsequent array of democratically beneficial outcomes such as political tolerance, and less political dogmatism, as well as affect changes in people's political behavior (Rathnayake & Winter, 2017). From the policy-making perspective, reducing homophily in people's social and informational networks also seems to be the key. Social media platforms shall address the disadvantages brought by algorithmic news personalization, and efforts should be made to provide social media users with diverse information content, encourage users to follow accounts with opposing views, and interact with peers and news sources that encompass dissimilar political beliefs.

Albeit important, the study is not immune to limitations. There are several shortcomings that must be acknowledged and that might ideally serve as an orientation for further research on the relationship between social media news use, social media political homophily, and political anger. First, while political anger is widely spread across countries, our survey data was collected in a single country, the U.S., and even though it is a panel dataset, it is based only on one year, 2019. In this sense, while the autoregressive models have shown that overall levels of political anger vary to a moderate extent in four months, it is important to see whether choosing a different time lag will make our variables of interest gain more importance (Eveland & Morey, 2011). We also encourage future studies to examine how the link between anger and political behavior may differ across racial groups (Phoenix, 2019), as this study controls for a non-granular white versus minorities dichotomy, and further racial effect nuances may be possible (Magee & Louie, 2016).

Similarly, additional works, comparative in nature, may shed light on the existence of different patterns between social media political homophily and political anger with various degrees of overall anger in the country. Macro, meso, and individual measurement instruments may prove useful here. For instance, there might be country-level moderators for the relationship identified such as the country's economic condition (Rico et al., 2020), ethnically located injustice (Holmes, 2004), and/or sexism culture (Kay, 2019). Additionally, we measured social media news use and social media political homophily with a self-report survey, which is subject to recall bias and social desirability bias (Scharkow, 2016). As computational methods are increasingly integrated into political communication research, it would be interesting to measure social media news use and social media political homophily with behavioral tracking data. While future studies can adopt more unobstructive measures to palliate potential bias, recent research consistently shows that although

self-reported and tracking data on social media news use encompass discrepancies, overall, they positively correlate (Ernala et al., 2020; Haenschen, 2020), which minimizes the impact of this limitation. Besides, it is worth noting that the behavioral tracking data is also subject to measurement error due to the variations of the operating system setting (Jones-Jang et al., 2020), which yields a caveat for using the tracking data as an objective benchmark. As suggested by Jürgens et al. (2020), future work can address the methodological challenge by developing a more advanced digital trace tracking tool, using source-and-issue-specific survey questions, employing longitudinal survey designs (which is done in our study), and combining different data sources. Overall, this study helps clarify the informational and network discussion antecedents of political anger, in a modest but much-needed empirical assessment for the field.

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