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Cross-Cutting Scanning, Integrating, and Interacting: Dimensions of Cross-Cutting Exposure on Social Media and Political Participation

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This study attempts to explicate the concept of cross-cutting exposure in the current media environment and to clarify its effects on political participation. Employing a two-wave survey of data collected during the 2016 U.S. presidential election campaign, the study empirically revealed that cross-cutting exposure in the social media environment comprises three subdimensions: cross-cutting scanning, cross-cutting integrating, and cross-cutting interacting. These three different experiences yield a distinctive influence on the level of political participation. Cross-cutting interacting is the only positive predictor of political participation, whereas cross-cutting scanning and integrating are not significantly associated with political participation. Implications of these results for deliberative democracy and participatory democracy are discussed.

Keywords: cross-cutting exposure, cross-cutting interacting, social media, political participation, deliberative democracy

It has been reported that political disagreement reduces citizen participation in politics (Mutz, 2002a, 2006). Accordingly, the existence of "fundamental incompatibilities" between participatory and deliberative democracy has been highlighted (Mutz, 2006, p. 2) because talking to fellow citizens with whom a person does not agree politically (i.e., cross-cutting exposure) is a key attribute of citizen deliberation (Stromer-Galley & Muhlberger, 2009). The relationship between cross-cutting exposure and political participation needs to be revisited in light of the dramatic changes in the communication environment. As people rely increasingly on online communication networks, notably those formed via social media, research has investigated their effects on citizens' disagreement exposure (Barnidge, 2015; Choi & Lee, 2015) and political participation (Lu, Heatherly, & Lee, 2016). Nonetheless, what has been ignored in the extant research is that meaningful changes are taking place not only within the arena of cross-cutting exposure, but also in the ways that people experience disagreement.

Researchers have understood cross-cutting exposure on a very broad basis, conceptualizing it as a unidimensional one that encompasses citizens' being exposed to, listening to, and actually being engaged with the other side (Shapiro, 2013). However, individuals' cross-cutting experience within online social networks is likely to vary. As online spaces facilitate both selective scanning and elaboration, people can either disregard

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dissonant voices or be more attentive to voices from the other side (Eveland & Dunwoody, 2002). At the same time, the quality of actual engagement with opposing parties might differ from person to person as online forums facilitate both civil and uncivil (Rowe, 2015) and both deliberative and nondeliberative discussion (Gramlich, 2016; Halpern & Gibbs, 2013).

In other words, the substance of online cross-cutting exposure is distinctive from that which occurs in offline spaces; however, most research to date has ignored these meaningful layers in citizens' cross-cutting exposure. Thus, the present research sheds new light on the long-studied concept of cross-cutting exposure and attempts to redefine it through a more thorough theorization of how people process cross-cutting information in a social media context. More specifically, I posit that cross-cutting exposure is a multidimensional concept that includes three subdimensions (cross-cutting scanning, cross-cutting integrating, and cross-cutting interacting) and test this structure. In addition, the differential effects that these three types of cross-cutting exposure, which involve different means of information processing, have on citizens' involvement in participatory activities are investigated.

Theoretical Framework

Cross-Cutting Exposure and Political Participation

Exposure to political disagreement has been hailed as the heart of democracy, particularly by proponents of deliberative democracy (Fishkin, 1995; Thompson, 2008). Its prodemocratic benefits have been revealed empirically, such as increased political tolerance and awareness of oppositional perspectives (Mutz, 2002b, 2006).

A paradox that has bewildered scholars is that disagreement may also have antidemocratic consequences, notably the political demobilization of citizens. Classical studies of political communication such as *The People's Choice* (Lazarsfeld, Berelson, & Gaudet, 1944) and *The American Voter* (Campbell, Converse, Miller, & Stokes, 1960) indicate that conflicts stemming from political disagreement can delay voting decisions and decrease enthusiasm for and interest in voting. Demonstrating empirical evidence of the negative effects of disagreement on participation, Mutz (2002a) notes that intrapersonal conflicts arising from the ambivalence between reinforcing and challenging views and internal conflicts related to a need not to make anyone uncomfortable by taking sides with one of a competing range of views (i.e., social accountability) are two key mechanisms that explain why cross-cutting exposure depresses political participation.

However, another line of studies has identified positive contributions from disagreement-related experiences that enhance citizen participation (Kwak, Williams, Wang, & Lee, 2005; McLeod et al., 1999; Scheufele, Hardy, Brossard, Waismel-Manor, & Nisbet, 2006; Scheufele, Nisbet, Brossard, & Nisbet, 2004). The proparticipatory results have been explained in terms of learning effects. In other words, cross-cutting exposure enables people to be aware of alternative perspectives, use further cognitive efforts to compare competing views, enhance knowledge, and eventually possess cognitive resources to participate in politics more actively (Scheufele et al., 2004, 2006).

Thus, the effects of political disagreement depend on the circumstances of cross-cutting communication. As Scheufele and colleagues (2004) note, the demobilizing effects of political disagreement may be "largely overridden by the positive political learning" (p. 332) when the communication environment is more amenable to an open and active exchange of competing views. Conversely, people may avoid politics altogether to maintain social harmony when cross-cutting exposure causes more conflict than learning.

The Social Media Environment and Cross-Cutting Exposure

It is not clear whether cross-cutting exposure within the social media environment promotes greater conflict or increased learning. In addressing this question, an important issue is how people experience "exposure" to disagreement on social media. As online social networks have become the main channels for obtaining and discussing political information (Duggan & Smith, 2016), the nature of cross-cutting exposure itself has changed.

In offline communication, the conceptual definition of cross-cutting exposure is clear. It encompasses various communication processes that are necessary for substantial interpersonal discussion with people whose political views are different, such as encountering opposing views from discussion partners, understanding opposing ideas, and exchanging opinions. Indeed, in previous studies of cross-cutting exposure in offline settings (Eveland & Hively, 2009; Huckfeldt, Mendez, & Osborn, 2004; Mutz, 2002a, 2002b; Scheufele et al., 2004), cross-cutting exposure is usually operationalized as the dissonance of political perspectives among people who regularly discuss politics in their daily lives, for example, regarding the choice of a presidential candidate or supporting political parties.

In a mediated communication setting, conceptualization and measurement of cross-cutting exposure have become vexing problems. A number of studies have focused on just the level of exposure, such as the perceived level of disagreement with political opinions posted by friends on social media (Barnidge, 2015), exposure to socially or politically dissonant messages received by mobile phones (Park & Gil de Zúñiga, 2019), and acquiring political or campaign information via websites that challenge people's perspective (Y. Kim & Chen, 2016), not considering whether the actual discussion process is involved. Moreover, unlike offline cross-cutting exposure, exposure to disagreement via news media, rather than via discussion partners, has been considered a cross-cutting experience. For example, exposure to politically dissonant news on social media (Min & Wohn, 2018) has been conceptualized as cross-cutting exposure.

Although some studies have focused more on "discussion," in many cases, researchers simply have examined the frequency of political discussion or talk online (or on social media) with others who have opposing views, without clarifying what constitutes discussion in the context of mediated communication (Choi & Lee, 2015; Gil de Zúñiga, Barnidge, & Diehl, 2018; Heatherly, Lu, & Lee, 2017; Yoo & Gil de Zúñiga, 2019). The concept of cross-cutting engagement presents an exceptional case, whereby researchers measured the levels of attention and response to politically dissonant postings that were observed on social media (Min & Wohn, 2018).

All of these complications occur because of the inherent nature of social media-mediated communication. The measurement of "exposure" has always proven difficult, and many have argued that the

concept itself is multidimensional. For example, Potter (2008) describes several states of exposure, including automatic, attentional, transported, and self-reflective. That is, people are sometimes exposed to messages using minimal cognitive energy, whereas at other times, they are so attentive that they actively interpret, process, and are hyperaware of messages.

Exposure as a separately stratified concept is more prominent on social media, particularly regarding cross-cutting exposure. First, people may simply scan politically dissonant information without paying it much attention. Automatic exposure in the form of a quick scan that is then ignored is a way that people control their online information consumption and cope with information overload (Eveland & Dunwoody, 2002; Song, Jung, & Kim, 2017). This form of scanning is likely to be conspicuous on social media because of the mostly asynchronous and non–face-to-face nature of computer-mediated communication (Herring, 2007). Thus, the conflicts coming from cross-cutting experiences can easily be avoided. One survey found that 83% of social media users simply ignore political postings that they disagree with when they encounter them, indicating that quick scanning is a prevalent type of cross-cutting exposure (Duggan & Smith, 2016).

However, at the same time, social media also feature other affordances that facilitate more attentive processing of information with which people disagree, particularly integrating both sides of the opposing perspective. People can contemplate their responses to the voices of other sides because, on most social media platforms, a post may remain visible for a certain amount of time (Herring, 2007), except when posted on the more ephemeral messaging services (e.g., Snapchat). Greater reflexivity in communication has been considered one of the distinctive characteristics of online communication (Dahlberg, 2001). Some people may compare competing views carefully and perform a sort of integration of various arguments, given that a commonly expected outcome of processing cross-cutting information is the simultaneous understanding of rationales for their own and oppositional viewpoints (Mutz, 2002b).

Although social media is a venue for meaningful cross-cutting discussion, a remarkable aspect of the discussion that takes place on social media is that it mostly has the form of asynchronous interactions among users (Jun, 2012), and the most common way of participating in discussions is through posting behavior. Expression of opinions via posting has been considered a unique way of conducting political discussion online (Gil de Zúñiga, Molyneux, & Zheng, 2014; Velasquez & Rojas, 2017). However, one-directional expression of political opinion may not be considered a discussion because reciprocity is the core requirement of quality discussion (Stromer-Galley & Wichowski, 2011). On social media, the presence of various interaction features (including commenting, sharing, and liking) lowers the threshold for participation in interactions with others (Choi, 2016). Each post shared on social media opens a separate discursive space where users can listen, criticize, and react to others on contested issues (Choi & Lee, 2015), and frequent visits to social media platforms enable users to navigate these discussion arenas seamlessly (Brundidge, 2010). Moreover, the increased identifiability of and access to enormous amounts of networked information in the social media environment also facilitate further opportunities for deliberative discussion (Halpern & Gibbs, 2013).

Researchers have only recently begun to pay attention to the spectrum of individuals' cross-cutting exposure. For example, Borah, Edgerly, Vraga, and Shah (2013) investigated the benefits of cross-cutting exposure by examining the roles of actual involvement in cross-cutting talk and valuing cross-cutting exposure separately. In another study, Min and Wohn (2018) differentiated cross-cutting exposure from engagement with

disagreement. In sum, it is reasonable to expect that cross-cutting exposure is generally threefold, involving scanning, integrating, and interacting. However, the structures of these dimensions are seriously understudied. Thus, I proposed the following research question to guide this investigation of the nature of cross-cutting exposure:

RQ1: How are the dimensions of cross-cutting exposure structured?

Different dimensions of cross-cutting exposure are likely to have distinctive effects on political participation. Mere exposure by itself is not expected to have meaningful effects because those exposed are either unaware of the content of information (Potter, 2008) or quickly scan the content without any significant cognitive effort (Eveland & Dunwoody, 2001, 2002). Such exposure may only increase ambivalence or internal conflicts, thus depressing participation. Nonetheless, the careful processing of cross-cutting information may yield different consequences. As Price and Zaller (1993) note, "who actually 'gets'" information is important when examining communication or media effects (p. 134). When users focus on and actually receive information, we can expect that this obtained information will be used by individuals to form and change their thoughts or behavior. Thus, some researchers propose that simple methods of measuring exposure (e.g., its frequency or duration) are abandoned in favor of alternative proxies, notably the extent of attention (Drew & Weaver, 1990; Eveland, Hutchens, & Shen, 2009) or a behavioral proxy such as responding to content using interactive features (Oeldorf-Hirsch, 2018).

More engaged exposure, such as the comparison and integration of cross-cutting information, is likely to result in an increased understanding of the given information, which may function as a resource for greater behavioral participation (Sotirovic & McLeod, 2001). Accordingly, it has been found that those who pay closer attention to discussions in a heterogeneous network are more likely to participate in political activities (Kwak et al., 2005).

The effects of actual interaction are likely to be noticeable. Deliberative theorists have highlighted the importance of engagement in the contested discussion (Dewey, 1927). Indeed, it has been found that actual discussion (McClurg, 2003) or attention to the discussion within a network (Kwak et al., 2005) is more important than the amount of possible cross-cutting information available within a network. Interaction with other sides on social media can be particularly effective for the facilitation of political participation because most discursive activities take place through "posting" behaviors such as contributing political content, commenting, or clicking reaction features. Online posting activities involve more effortful cognitive commitment, including deliberation and elaboration (Jung, Kim, & Gil de Zúñiga, 2011; Polletta, Chen, & Anderson, 2009). This is because people are more closely involved with a topic when they function as a source of information via posting (Sundar, Oh, Bellur, Jia, & Kim, 2012). Thus, the experience is likely to lead to a more in-depth understanding of the political context, which again functions as a strong cognitive means of political participation (Sotirovic & McLeod, 2001).

In summary, the political effects of each dimension of cross-cutting exposure differ. Based on the preceding discussion, I expected that cross-cutting scanning would be a negative predictor of political participation, and that cross-cutting integrating and interacting would be positively related to a higher level of political participation. Thus, the following hypotheses were proposed:

H1: Cross-cutting scanning will be negatively associated with political participation.

H2: Cross-cutting integrating will be positively associated with political participation.

H3: Cross-cutting interacting will be positively associated with political participation.

Method

Data

To answer the research question and test the hypotheses, I used data from a national online survey of U.S. adults. The data were collected from a single panel of respondents in two waves prior to the 2016 U.S. presidential election. The Wave 1 survey was conducted between October 4, 2016, and October 8, 2016, by Qualtrics, a professional survey research firm in the United States. To reflect the demographic composition of the U.S. public as reported in the U.S. Census more accurately, the researchers relied on a quota based on the age and gender of the U.S. population (37.2 years of mean age and 48.4% male; U.S. Census Bureau, 2011).

The invitation advertisement was distributed to Qualtrics' panel members who were registered to participate in online surveys administered by the firm, consulting the desirable demographic ratio of the final sample, as has been adopted in previous studies (Choi, 2016; Gil de Zúñiga, Garcia-Perdomo, & McGregor, 2015). Online credits, later redeemable for gift cards, were given to the respondents as rewards for participating in the survey. For the Wave 1 data, 1,549 respondents participated, and the response rate was 61% according to the American Association of Public Opinion Research's response rate calculator. This was far above the acceptable minimum for an online panel survey (Sax, Gilmartin, & Bryant, 2003). This very high participation rate may have been due to heightened interest in the election, as the presidential election day (November 8, 2016) approached. The average age of the final sample was 38.68 years old, and 50.5% of respondents were male.

The Wave 2 survey was conducted among the same respondents as the Wave 1 survey between October 24, 2016, and November 6, 2016. In the second wave, 933 responses were collected, with a retention rate of 60%, which is also acceptable for claiming the validity and integrity of the data (Sánchez-Fernández, Muñoz-Leiva, & Montoro-Ríos, 2012).

Key Variables

Cross-Cutting Exposure on Social Media

Cross-cutting exposure, a key variable in this study, was measured through a set of questions in the Wave 1 survey. The first battery of questions focused on *cross-cutting scanning*. Respondents answered on a 5-point scale (0 = *never*, 4 = *very often*) how often they (a) encounter information about the candidate they do not support (M = 2.72, SD = 1.18), (b) encounter election-related information with which they disagree (M = 2.66, SD = 1.15), (c) encounter people who do not support the candidate they favor (M = 2.61, SD = 1.15), and (d) read election-related posts with which they disagree (M = 2.41, SD = 1.17).

The next group of questions was about *cross-cutting integrating*, such as how often respondents (a) try to understand the key arguments when they encounter a post about the candidate they do not support (M = 2.21, SD = 1.16), (b) compare their political views with those of other users who support the candidate they do not favor (M = 2.16, SD = 1.22), (c) compare with their own thoughts when they encounter an election-related post with which they disagree (M = 2.35, SD = 1.18), and (d) compare with the opinions of the candidate they favor when they encounter opinions of the candidate they do not support (M = 2.42, SD = 1.16).

Involvement in *cross-cutting interacting* was addressed in the last group of questions. The participants indicated how often they (a) respond to others' posts with which they disagree by posting a comment or opinion of their own (M = 1.18, SD = 1.22), (b) participate in discussions in which people argue with each other about election-related issues (M = 1.26, SD = 1.25), (c) upload postings about controversial campaign issues to hear opinions of other social media users (M = 0.94, SD = 1.17), and (d) express their reaction to posts with which they disagree using various emoticons, such as "like" and "angry" (M = 1.29, SD = 1.29).

Political Participation

An index to measure respondent participation in the political process was built using questions frequently used by previous studies on political participation (e.g., Gil de Zúñiga, Jung, & Valenzuela, 2012; Lu et al., 2016). Respondents were asked to answer how often they had participated in the following political activities over the previous year on a 5-point scale (0 = *never*, 4 = *very often*): "worked for a political party or candidate," "contacted a politician or government official (by telephone or letter)," "attended a speech or public forum on the election," "attended a meeting of a political organization," "donated money to a political cause or organization," "attended a political rally or demonstration," "signed a political petition," and "joined a political action group or public interest group." Cumulative indices of political participation for the Wave 1 survey (M = 5.59, SD = 7.43, range = 0–32, Cronbach's α = .94) and for the Wave 2 survey (M = 5.40, SD = 7.45, range = 0–32, Cronbach's α = .95) were created. Due to the positively skewed distribution of political participation variables, the indices of political participation were transformed into a square root term (Hair, Black, Babin, Anderson, & Tatham, 2006).

Control Variables

The following variables were included in the analysis models for control: age (38.68 years old), gender (50.5% male), income (M = 4.51, SD = 2.21, range = 0–8; 4 = $40,000 to under $5,000, 5 = $50,000 to under $60,000), education ($M$ = 4.51, SD = 2.21, range = 0–6; 4 = some college, 5 = college graduate), political interest (M = 2.36, SD = .72, range = 0–3), political discussion (M = 2.69, SD = 1.06, range = 0–3), ideological strength (M = 1.61, SD = 1.07, range = 0–3), social media use (M = 2.58, SD = 1.97, range = 0–7), newspaper use (M = 1.34, SD = 1.32, range = 0–5), and TV news use (M = 2.89, SD = 1.58, range = 0–5).

Results

Construct of Cross-Cutting Exposure

To determine the structure of cross-cutting exposure, I split the sample randomly and conducted exploratory factor analysis (principal axis factoring) on half, with confirmatory factor analysis (CFA) on the other half to cross-validate the findings from the exploratory factor analysis. No significant demographic differences were found between the exploratory factor analysis and CFA groups.

Three constructs were successfully loaded on 12 questions asking about respondents' cross-cutting exposure, and these three factors explained 67.55% of the total variance. Four items related to encountering and reading cross-cutting information constituted the first component, which was referred to as cross-cutting scanning (M = 10.43, SD = 4.09, range = 0–16, Cronbach's α = .89).

The second component, cross-cutting integrating (M = 9.15, SD = 4.13, range = 0–16, Cronbach's α = .91), was loaded on items about understanding and comparing one's own ideas with those of one's opponents. Last, items related to interacting with the politically opposite side constituted the third component, referred to as cross-cutting interacting (M = 4.68, SD = 4.29, range = 0–16, Cronbach's α = .89; see Table 1).

Table 1. Cross-Cutting Exposure: Factor Loadings (N = 467).

Component	Item	Factor loading	Variance (%)
Cross-cutting scanning	Encounter information about the candidate I do not support	.88	6.81
	Encounter election-related information that I disagree with	.83	
	Encounter people who do not support the candidate I favor	.80	
	Read election-related posts that I disagree with	.75	
Cross-cutting integrating	When I encounter a post about the candidate I do not support, I try to understand its key arguments	.79	45.61
	When I encounter an election-related post that I disagree with, I compare my political views with those of other users who support the candidate I do not favor	.78	
	When I encounter an election-related post that I disagree with, I compare it with my own thoughts	.89	
	When I encounter opinions of the candidate I do not support, I compare them with the opinions of the candidate I favor	.85	
Cross-cutting interacting	Respond to others' posts that I disagree with by posting a comment or opinion of my own	.88	15.13
	Participate in discussions in which people argue with each other about election-related issues	.85	
	Upload postings about controversial campaign issues to hear opinions of other users	.81	
	Express my reaction to posts that I disagree with using various emotion buttons, such as "like" and "angry"	.71	

Note. Principal axis factoring (Promax with Kaiser normalization). Rotation converged in five iterations.

To confirm whether the understanding of cross-cutting exposure, which has three dimensions, is theoretically and empirically valid, I explored the underlying constructs through several competing CFA models. The fits of each model were compared using the Mplus 7.4 program. This approach has been employed in many previous studies for concept explications and measurement development in the field of communication (Choi, 2016; Shen, 2011).

For this process, I compared seven CFA models, as shown in Table 2: a one-factor model, a two-factor model Version 1 (oblique and orthogonal: cross-cutting scanning being one factor, and cross-cutting integrating and interacting being another factor), a two-factor model Version 2 (oblique and orthogonal: cross-cutting scanning and integrating being one factor, and cross-cutting interacting being another factor), and a three-factor model (oblique and orthogonal: cross-cutting scanning, integrating, and interacting being separate factors).

Table 2. CFA Model Comparisons (N = 426).

Model	X^2	*df*	*p*	CFI	TLI	SRMR	RMSEA	AIC	Δ*df*	$\Delta\chi^2$	*p*
A	1254.70	54	<.01	.64	.55	.15	.23	14471.29	A vs. F: 3	111.92	<.01
B	876.84	53	<.01	.75	.68	.13	.19	14104.43	B vs. C: 1	245.92	<.01
C	1124.75	54	<.01	.68	.61	.27	.22	14350.35			
D	465.15	53	<.01	.87	.83	.06	.14	13692.74	D vs. E: 1	53.22	<.01
E	520.36	54	<.01	.85	.82	.16	.14	13745.96			
F	127.78	51	<.01	.98	.97	.04	.06	13359.37	F vs. G: 3	322.28	<.01
G	456.06	54	<.01	.89	.87	.27	.13	13681.65			

Note. CFI = comparative fit index; TLI = Tucker–Lewis index; SRMR = standardized root mean residual; AIC = Akaike information criterion; A = one-factor model; B = two-factor (Version 1) oblique model; C = two-factor (Version 1) orthogonal model; D = two-factor (Version 2) oblique model; E = two-factor (Version 2) orthogonal model; F = three-factor oblique model; G = three-factor orthogonal model.

For comparison and evaluation of the models, I used the model fit criteria suggested by Hu and Bentler (1999) in which a model is considered acceptable when the comparative fit index (CFI) is above .96 and the standard root mean residual (SRMR) is below .10, or when both the root mean square error of approximation (RMSEA) and SRMR are below .06. The CFI describes the level of absolute fit, SRMR denotes the standardized differences between observed and predicted correlations, and RMSEA indicates model parsimony.

For nested competing models, I examined discriminant validity (Byrne, 2001; Hair et al., 2006). Among the competing models, the one-factor model (A) and the three-factor orthogonal model (G) were nested within the three-factor oblique model (F). The two-factor orthogonal models (C and E) were also hierarchically nested within the two-factor oblique models (B and D). When comparing the nonnested models, the Akaike information criterion value and general model fit indices were referred.

As demonstrated in Table 2, the three-factor oblique model (F) showed superior model fit compared with both the one-factor model (A: $\Delta\chi^2 = 111.92$ with $\Delta df = 3$, $p < .01$) and the three-factor orthogonal model (G: $\Delta\chi^2 = 322.28$ with $\Delta df = 3$, $p < .01$). The poor fit of the orthogonal model makes sense because it was assumed that the three dimensions are separate but related. The three-factor oblique model's (F) model fit

indices (CFI = .98, SRMR = .04, RMSEA = .06) all satisfied the criteria of a good CFA model suggested by Hu and Bentler (1999).

The two-factor oblique model Version 1 (B) also demonstrated better fit than the two-factor orthogonal model Version 1 (C: $\Delta\chi^2 = 245.92$ with $\Delta df = 1$, $p < .01$), and the χ^2/df difference test also showed that the two-factor oblique model Version 2 (D) was a better model than the two-factor orthogonal model Version 2 (E: $\Delta\chi^2 = 53.22$ with $\Delta df = 1$, $p < .01$). However, the general model fits for the two-factor oblique model Version 1 (B) and Version 2 (D) were far below the cutoff criteria of good models. Thus, these analyses suggest that people's cross-cutting exposure consists of three subdimensions, namely, cross-cutting scanning, cross-cutting integrating, and cross-cutting interacting (RQ1). The final model is visualized in Figure 1.

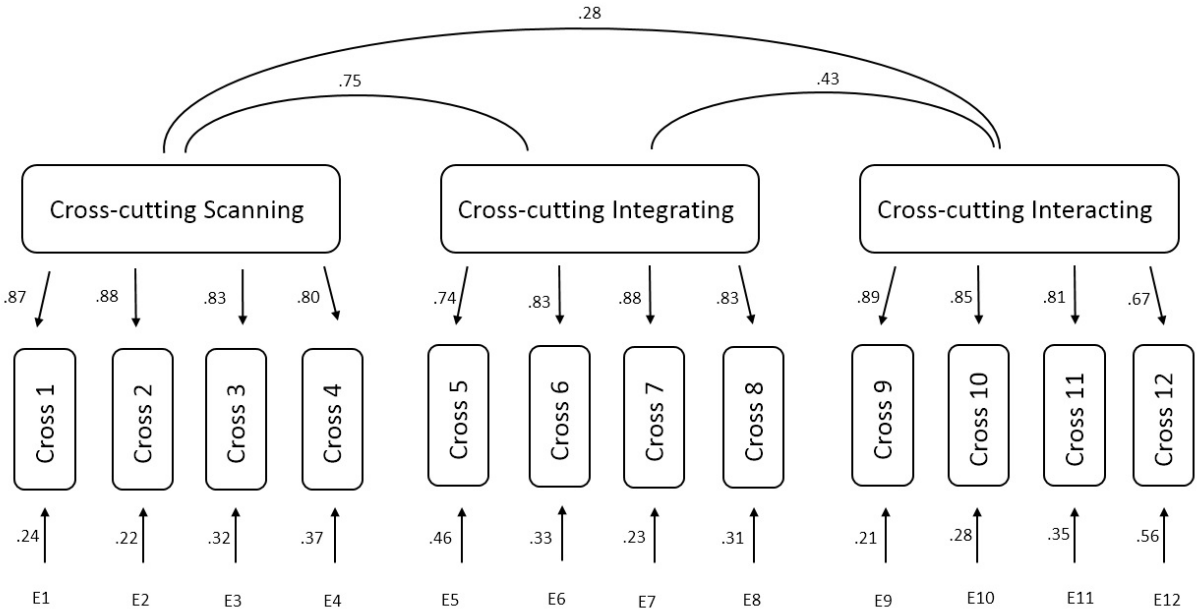

Figure 1. Dimensions of cross-cutting exposure: Final three-factor oblique model.

The three-factor final model demonstrated a high level of both convergence validity and discriminant validity. Composite reliability for all three constructs was above .70 (cross-cutting scanning: .91; cross-cutting integrating: .89; cross-cutting interacting: .88), meeting the criterion recommended by Hair et al. (2006). The average variance extracted for the constructs was .72 (cross-cutting scanning), .68 (cross-cutting integrating), and .66 (cross-cutting interacting), all of which are greater than the criterion (.05) suggested by Fornell and Larcker (1981). The results indicate that the three-factor model is internally consistent and reliable.

Cross-Cutting Exposure and Political Participation

To test whether cross-cutting integrating and cross-cutting interacting are positively associated with political participation, while cross-cutting scanning is negatively associated (H1, H2, H3), I conducted an ordinary least square regression analysis (see Table 3).

Table 3. Regression Analysis of Political Participation (Betas;* N *= 752, Listwise).

	Political participation (Time 2)		
Variable	Model 1 (n = 784)	Model 2 (n = 775)	Model 3 (n = 790)
Demographics			
Age	.06**	.06**	.05*
Gender (male)	.08***	.07**	.07**
Education	.03	.03	.04
Income	−.02	−.03	−.02
Political characteristics			
Political interest	.04	.04	.05†
Political discussion	.04	.05†	.02
Ideological strength	−.02	−.02	−.01
Media use			
Newspaper	.04†	.04	.02
TV news	−.04	−.04	−.04†
Social media	−.01	−.01	−.03
Political Participation (Time 1)			
Political participation	.77***	.77***	.73***
Cross-cutting exposure			
Cross-cutting scanning	.04		
Cross-cutting integrating		.02	
Cross-cutting interacting			.09**
R^2 (%)	66	66	67

†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

The correlation among key variables is presented in Table 4. A lagged autoregressive model was specified, in which the Wave 2 dependent variable (political participation Time 2) was predicted by the Wave 1 independent variable (cross-cutting exposure), controlling for the dependent variable in Wave 1 (political participation Time 1), as well as other potentially influencing variables. In doing so, the temporal order between variables, which is one of the key preconditions for testing causal effects, was testable. This autoregressive model was chosen to analyze the panel survey data because this approach has been frequently adopted by scholars in that it is less likely to inflate error variances compared with the fixed effects model (e.g., Matthes & Marquart, 2015; Shah, Cho, Eveland, & Kwak, 2005).

Table 4. Correlation for Key Variables.

Variable	Cross-cutting scanning	Cross-cutting integrating	Cross-cutting interacting	Political participation (Wave 1)	Political participation (Wave 2)
Cross-cutting scanning					
Cross-cutting integrating	.70***				
Cross-cutting interacting	.35***	.41***			
Political participation (Wave 1)	.20***	.30***	.61***		
Political participation (Wave 2)	.18***	.26***	.58***	.85***	

***$p < .001$.

Table 3 demonstrates that the proposed variables in the three models explained a total of 66%, 66%, and 67% of the variance, respectively. The 95% confidence interval for the R^2 value was statistically significant, given the value of the R^2, the number of predictors in the model, and the total sample size (Model 1: CI [.62, .70]; Model 2: CI [.62, .70]; Model 3: CI [.63, .70]). Among the control variables, age and gender were the only two significant variables predicting political participation. Political interest and discussion were not significant predictors of political participation. Among variables regarding cross-cutting exposure, cross-cutting scanning and cross-cutting integrating were not significant predictors of political participation after controlling for political participation in Time 1 and other controlling variables (see Models 1 and 2 in Table 3). Among cross-cutting experience, the only significant and positive predictor of political participation in Time 2 was the level of cross-cutting interacting in Time 1 ($\beta = .09$, $p < .01$), even after controlling for political participation in Time 1(see Model 3 in Table 3).[1] Thus, we can say that the active exchange of thoughts and opinions with fellow citizens holding opposing political perspectives on social media can result in further participation in politics. Thus, Hypothesis 3 was supported, but Hypothesis 1 and Hypothesis 2 were not supported.

Discussion

The aim of this study was to reconceptualize cross-cutting exposure in the context of social media environments and to clarify its effects on political participation. The present study empirically identified that, in the social media environment, the cross-cutting experience is multidimensional, including cross-cutting

[1] When the political participation in Time 1 was not controlled, the beta coefficient of cross-cutting interacting in Time 1 was much greater ($\beta = .47$, $p < .001$) and the model explained 36% of the variance. The result that cross-cutting interacting in Time 1 was a significant predictor of political participation in Time 2, even when the level of political participation in Time 1 had been controlled, indicates a causal relationship.

scanning, integrating, and interacting. These differing experiences have distinctive influences on political behaviors: Those who interact with their fellow citizens holding dissenting political views are more likely to participate in political activities, and those who are simply exposed to or think carefully about politically dissonant information do not show any noticeable tendency to participate any more or less in political activities.

The revelation of three dimensions of cross-cutting exposure on social media is meaningful in that it serves as a starting point for reframing the discussion around the nature and democratic consequences of cross-cutting exposure in online contexts. Most of all, the findings indicate a need for a more sophisticated approach to cross-cutting exposure. This is because there could be a different conclusion regarding the relationship between cross-cutting exposure and political participation, particularly in the context of the social media environment, depending on how such exposure is defined. Importantly, it was found that cross-cutting scanning is not significantly associated with political participation. This may be because mere exposure (i.e., scanning) itself has an effect on participation that is only marginal. The effects of exposure to disagreement on participation were reduced or became insignificant when the frequency of discussion was included in the analysis model as a control variable (Hutchens, Eveland, Morey, & Sokhey, 2018; E. Kim, Scheufele, & Han, 2011), which indicates that the effects of mere exposure may have been overestimated.

One debatable finding of the study is that integrating one's own and other contrary perspectives does not produce a proparticipatory benefit. This integration may increase the level of ambivalence and cross-pressure, which would lead people to become indifferent to politics. Or the findings indicate that, although cross-cutting integration may increase one's awareness of the rationale of an opposing party (Mutz, 2006), it does not mean that dissonant information is internalized. As identified in research on biased information processing (Taber & Lodge, 2006), increased awareness of opposing opinions may result in either the confirmation of preexisting perspectives or the disconfirmation of opposing perspectives.

To interpret these results, we should consider why cross-cutting interaction is the only way to obtain beneficial resources for political participation. The insignificant effects of general discussion on participation (see Table 3) indicate that there is something unique about cross-cutting interacting. An explanation for this can be traced to the learning effects that derive from posting. Nonetheless, a more careful examination of the innate attributes of interaction on social media is necessary. The most important behavior in online cross-cutting interacting is users' willing participation in discursive threads through posting. As reflected in the measurement of the variable, users interact with others across political lines by posting comments in response to opposing opinions or posting related content to initiate discussion on controversial issues. In other words, users' willingness to interact with other citizens who hold opposing views is the key to understanding the political benefits of cross-cutting interacting. As shown in previous studies, the willingness to argue with those who have opposing opinions is influenced by the majority perception (J. Kim, Wyatt, & Katz, 1999); however, those who express their opinions, regardless of the presence of political disagreement, are more politically active in general (E. Kim et al., 2011).

The willingness to participate in cross-cutting discussion indicates that such interaction is valued. Borah and associates (2013) note that valuing cross-cutting discussion is as important as the discussion itself in that "to really reap the benefits of cross-cutting discussion, citizens must bring with them values that make that experience worthwhile" (pp. 395–396). Whether or not one values cross-cutting interaction

is also related to the notion of dialogic openness. Dialogic openness, that is, the willingness to initiate political talk with others who are not well known, was found to mediate the link between cross-cutting talk and political participation because this openness reflects an orientation to deliberation (Lee, Kwak, & Campbell, 2013). Summing up, the propensity to participate in a cross-cutting interaction on social media by posting and commenting among politically opposing others indicates a willingness and openness to cross-cutting exposure, as well as its positive evaluation, which naturally leads to the further acquisition of political benefits via more deliberation.

In sum, these findings show that social media create a communication circumstance where cross-cutting exposure may be related to increased political participation. The significant demobilizing effects of cross-cutting exposure have not been found on social media. Some people may still feel conflict from ambivalence or social desirability, which have been noted to decrease participation; however, such conflicts can be easily rejected or discounted if one so wishes by scanning and ignoring. As long as people interact with fellow citizens by posting and expressing opinions, we might expect more deliberation or learning effects from cross-cutting exposure on social media. The social media setting contrasts with interpersonal cross-cutting situations, where cross-cutting communication may lead to potentially serious risks to social relationships because communication takes place in a face-to-face and mostly synchronous way. The consequences of a weak form of cross-cutting pressure have been studied in cross-cutting exposure via news media (Matthes, 2012) or political advertisements (Matthes & Marquart, 2015), all of which have shown that the effects of mediated cross-pressure clearly differ from those resulting from interpersonal pressure.

Thus, these findings show that the ideals of deliberative democracy and participatory democracy are not necessarily compatible in the social media setting. However, to create a link between them, it is imperative to encourage citizens to engage in cross-cutting interaction in the existing communication environments. Nonetheless, little is known about what makes people more willing to interact with those with politically conflicting ideas. Borah and colleagues (2013), in a rare and meaningfully related study, explored the role of political socialization among adolescents between 12 and 17 years of age, and identified an influence of family communication patterns and school curricula on valuing cross-cutting experience and involvement in talk with others who have opposing political views. The study found that adolescents who are exposed to concept-oriented family communication patterns, that is, a communication type through which expression of beliefs and challenges to others are encouraged, as well as those who are exposed to greater classroom-related political/social activities, were more likely to value cross-cutting discussion and to participate in the cross-cutting discussion. These findings call for scholars to pay closer attention to how we can encourage cross-cutting interaction. As the number of citizens who value and participate in cross-cutting interacting increases, the connecting link between deliberative and participatory democracy will be strengthened. Thus, we need to develop practical ways of building communication spaces where cross-cutting interacting can takes place, as well as ways of encouraging citizens to value such communication.

The methodological contributions of this study are also worth mentioning. The concept of cross-cutting exposure was explored, and more sophisticated measures were proposed by specifying and comparing competing CFA models. Given the argument that more utilization of measurement models is required to refine frequently used measurements in the field of journalism and mass communication research (Holbert & Grill, 2015), the typology of cross-cutting exposure suggested in this study will

contribute to advances in future research on this concept. The present study examined the lagged effects of cross-cutting exposure on political participation, employing a two-wave panel survey. The results provide greater power of explanation than those of many previous studies based on cross-sectional data.

In discussing the significance of the study, however, several limitations should be addressed. Most of all, respondents in this study were asked about their cross-cutting-related experiences on general social media. However, it should be recognized that various types of social media exist, and level of openness, permitted anonymity level, reciprocity, and offered interactive features, all of which may affect the way people experience and express disagreement, differ. In particular, the network size, which may have significant effects on the extent of cross-cutting exposure, differs depending on the type of social media. Thus, future studies need to explore the issue of cross-cutting exposure in the context of the distinctive characteristics of social media environments.

It should also be noted that the three kinds of cross-cutting exposure are different from one another, but they may occur sequentially. Frequent scanning or integrating is likely to result in more cross-cutting interacting and may eventually lead to greater political participation. Although such mediation relationships were not particularly theorized or tested in this study, they would be worth examining in future studies. Measurement of the key dependent variable (i.e., political participation) is also notable. The present study focused on the extent of behavioral participation in political processes, such as working for a political party or candidate, contacting a politician or government official, or attending a speech or public forum on the election. However, studies have noted that cross-cutting exposure also has a meaningful influence on the timing of voting decisions, notably by slowing it down (Matthes, 2012; Nir & Druckman, 2008). If the timing of the voting decision is delayed, then the extent of political participation is accordingly affected because citizens have less time to participate in politics to promote their political preferences. However, the present study did not consider these effects, mainly because of insufficient measurement.

In addition, the findings of this study show only a part of the dynamics between cross-cutting exposure on social media and political participation. Other factors should be considered here, such as the social context of the network. For example, the quality of cross-cutting exposure may be dependent on the political expertise of people in one's social media network, which is likely to have meaningful effects on political participation (McClurg, 2006). Future studies should investigate more detailed relationships among such variables.

Despite the limitations mentioned above, this study offers valuable insights into the trajectories of the changing media environment and their political consequences. These changes involve both positive and negative elements, and the findings offer valuable suggestions for how we can better use technological developments in communication to build a healthier democracy.

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