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Social Media Social Capital, Offline Social Capital, and Citizenship: Exploring Asymmetrical Social Capital Effects

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In pursuit of a healthier and participatory democracy, scholars have long established the positive effects of social capital, values derived from resources embedded in social ties with others which characterize the structure of opportunity and action in communities. Today, social media afford members of digital communities the ability to relate in new ways. In these contexts, the question that arises is whether new forms of social capital associated with the use of social media are a mere extension of traditional social capital or if they are in fact a different construct with a unique and distinct palette of attributes and effects. This study introduces social media social capital *as a new conceptual and empirical construct to complement face-to-face social capital. Based on a two-wave panel data set collected in the United States, this study tests whether social capital in social media and offline settings are indeed two distinct empirical constructs. Then, the article examines how these two modes of social capital may relate to different types of citizenship online and offline. Results show that social media social capital is empirically distinct from face-to-face social capital. In addition, the two constructs exhibit different patterns of effects over online and offline political participatory behaviors. Results are discussed in light of theoretical developments in the area of social capital and pro-democratic political engagement.*

Keywords offline political participation, online political participation, social capital, social media, social media social capital, survey panel data

The emergence of social media platforms has reinvigorated scholarly interest in social capital (Skoric & Zhu, 2015; Valenzuela, Park, & Kee, 2009; Williams, 2006; Zhong, 2014). These media afford members of digital communities the ability to relate in new ways, in which the co-presence of others is not necessary to develop social capital (Gil de Zúñiga, Jung, & Valenzuela, 2012). In this context, the question that arises is whether new forms of social capital associated with the use of social media are a mere extension of traditional social capital or if they are in fact a different construct with a unique and distinct palette of attributes and

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effects (see, e.g., Molyneux, Vasudevan, & Gil de Zúñiga, 2015; Williams, 2006). That is, in addition to face-to-face means of generating social capital, it is possible that social media users now develop distinctive ways to remain close to other users, fostering community values in novel-yet-genuine ways. Because of the close relationship between social capital and political engagement (Bourdieu, 1985; Brehm & Rahn, 1997; Coleman, 1988; Lake & Huckfeldt, 1998; Lin, 2001), questions also arise about whether differences in the ways social capital is produced translate into different patterns of political action.

Based on a two-wave panel data set collected in the United States, this study tests whether social capital in social media and offline settings form two distinct empirical constructs. Then, the study clarifies the symbiotic, although asymmetrical, relationship between the two social capital constructs. Finally, the article examines how these two modes of social capital may relate to political engagement online and offline.

Literature Review

Offline Social Capital Versus Social Media Social Capital

Social capital can be broadly defined as the value derived from resources embedded in social ties with others (Lin, 2008). The concept was originally used to characterize the structure of opportunity and action in communities or collectives (Coleman, 1988, 1990), but the idea was later adapted to the study of individual behavior and orientations toward politics and the public sphere (Bourdieu, 1985; Brehm & Rahn, 1997; Lin, 2001). This adaptation tracked closely with the shift in conceptualization of community as an entity defined by geo-spatial structure to one defined by the structure of interpersonal relationships (Fischer, 1982; Rainie & Wellmann, 2012). Thus, as scholars came to see community as diffused networks of personal relationships, they came to view social capital as the value those relationships add to individuals' lives (Burt, 2005; Shah & Gil de Zúñiga, 2008).

Social media, including sites such as Facebook and Twitter, allow users to construct public or semi-public profiles, articulate their social connections with other profiles, and navigate these connections over virtual space (Boyd & Ellison, 2007). Research has demonstrated their ability to provide social support to users who lack self-esteem (Ellison, Steinfield, & Lampe, 2007; Steinfeld, Ellison, & Lampe, 2008). Other work has shown how they provide new ways for people to connect with politics through engagement with news (Bakshy, Messing, & Adamic, 2015; Barthel, Shearer, Gottfried, & Mitchell, 2015), expression or involvement with political discussion (Bachmann, Correa, & Gil de Zúñiga, 2012; Barnidge, 2015; Gil de Zúñiga, Molyneux, & Zheng, 2014; Kim, 2011; Valenzuela, 2013), or participation in online or offline mobilization efforts (Bode, 2012; Bode, Vraga, Borah, & Shah, 2014; Valenzuela et al., 2009).

This empirical evidence implies that social media change the structure and nature of social connection, and therefore that they may alter the distribution and nature of social capital embedded in those social relationships. For example, research has shown that social media enable users to seek broader bases of social support and affiliation (Ellison, Steinfeld, & Lampe, 2011). In addition, research has shown a direct relationship between social media use or social media news use and social capital (Gil de Zúñiga et al., 2012), while others have found that social media contribute to offline behavior that contributes to social capital (Hampton, Lee, & Her, 2011).

Not only does this research show that social media promote the development of social capital, it also points toward several reasons that social capital created in social media settings is conceptually and empirically different from social capital created in offline

settings. First, social media alter the structure of social communication through the articulation of latent or weak-tie relationships (Gil de Zúñiga & Valenzuela, 2011). This articulation function means that social media provide users with new and different kinds of social information about relationships (e.g., Kwon, Stefanone, & Barnett, 2014; Walther, Van der Heide, Kim, Westerman, & Tong, 2008), from which new and different kinds of value can be derived (e.g., Ellison et al., 2011). Second, social media promote engagement with a broader range of media content related to politics and public affairs (Bakshy et al., 2015; Barbera, 2014; Barnidge, 2015; Kim, 2011; Kim, Hsu, & Gil de Zúñiga, 2013), and they afford new ways to engage with semi-public conversations occurring in egocentric social networks (Rojas, 2015; Yamamoto, Kushin, & Dalisay, 2013; Zhang, Johnson, Seltzer, & Bichard, 2010). These behaviors represent different avenues for users to recognize and develop value in social relationships. Finally, social media provide new ways for users to convert latent social value into social or political action (Bode et al., 2014; Gil de Zúñiga et al., 2012). Taken together, these three points suggest that social capital on social media differs from social capital in offline settings in terms of the latent distribution of social value and resources, the process of recognition and development of these very characteristics, as well as the conversion of these values and resources into more tangible individual or collective benefit. Therefore, it is hypothesized that this conceptual distinction will manifest empirically.

H1: Offline social capital and social media social capital will form two different factors.

Some scholars have asserted that social connection on social media tends to move from the offline realm to the online environment (Boyd & Ellison, 2007). That is, social media translate social connections formed offline to online platforms. However, theoretically, the causal relationship between social connectedness in the two environments could run the other way—from online to offline. Research shows that social media tend to expand social networks (Hampton, Sessions, & Her, 2011; Tahkteyev, Gruzd, & Wellman, 2012), and that relationship maintenance on social media typically strengthens offline social connection (Ramirez, Sumner, & Spinda, 2015; Toma & Choi, 2016). Given these multiple possibilities regarding the directionality of the causal relationship between social capital offline and on social media, we pose a research question (RQ) asking which construct more strongly predicts the other over time.

RQ1: Does offline social capital lead to social media social capital more strongly over time than the other way around?

Offline Versus Online Political Participation

Traditional political participation is a multidimensional construct characterized by four kinds of political behavior: voting, campaign activity, contacting officials, and collective action (Verba, Schlozman, & Brady, 1995). But the rise of the Internet witnessed the emergence of new forms of political participation that are not included in this typology (Gil de Zúñiga, Veenstra, Vraga, & Shah, 2010). These new kinds of participation online are arguably more personal and driven by individuals' social and political identities (Bennett, 1998), which may also be detached from institutionalized politics in some cases (Bimber, Stohl, & Flanagin, 2009). In fact, many are more ephemeral kinds of behavior—activities in which individuals can engage with relatively low levels of long-

term commitment (Norris, 2002). Even still, these new forms of participation, albeit distinct from offline political activities, appear to coincide with other forms that require more individual involvement (Gil de Zúñiga et al., 2010), meaning there is now a wider range of behaviors that draw people into politics, more broadly (Bakker & de Vreese, 2011).

Social Capital and Offline Political Participation

Social capital is closely related to political participation (Bourdieu, 1985; Brehm & Rahn, 1997; Coleman, 1988; Lake & Huckfeldt, 1998; Lin, 2001). From its origins, the social capital concept was used to explain political action (Rojas & Barnidge, 2013), although later work treated participation as an indicator of social capital, as well (e.g., Brehm & Rahn, 1997; Putnam, 2000; Shah, Kwak, & Holbert, 2001; Shah, McLeod, & Yoon, 2001). Others have subsequently argued, however, that political behavior is an outcome of social capital, rather than its indicator (e.g., Gil de Zúñiga et al., 2012; Molyneux et al., 2015), because the value inherent in social relationships must be tapped through communication in order to produce action (Rojas, Shah, & Friedland, 2011). In support of this conceptual clarification, recent research shows robust evidence of a relationship between social connectedness and political participation not only in the United States, but also in Europe, Asia, and South America (Campus, Pasquino, & Vaccari, 2008; Gibson & Cantijoch, 2013; Giugni, Michel, & Gianni, 2014; Gustafsson, 2012; Skoric & Zhu, 2015; Zhang & Chia, 2006). In short, how people are connected to one another matters for political participation.

Because the idea that offline social capital is linked to offline political participation is well-established in the literature (e.g., Lake & Huckfeldt, 1998), we hypothesize a positive relationship with both voting and other forms of offline participation.

H2: Offline social capital will be positively related to (a) offline political participation and (b) voting.

Online and offline political activities tend to be closely interrelated (Bakker & de Vreese, 2011), in part because people draw on their online social contacts for offline action (Bennett & Segerberg, 2012; Rojas & Puig-i-Abril, 2009). Increasingly, people use social media to mobilize their networks for on-the-ground political action, with recent examples of this online-to-offline phenomenon including the Arab Spring (Eltantawy & Weist, 2011; Howard & Parks, 2012; Lim, 2012, 2013) and the Occupy movements (Bennett & Segerberg, 2012; Bennett, Segerberg, & Walker, 2014; Gleason, 2013; Theocharis, Lowe, Van Deth, & Garcia-Albacete, 2015). Therefore, it is hypothesized that the resources embedded in social connections formed on social media will also be associated with offline political participation.

H3: Social media social capital will be positively related to (a) offline political participation and (b) voting.

Social Capital and Online Political Participation

Prior research shows a positive relationship between social capital on social media and online political participation (Gil de Zúñiga et al., 2012; Valenzuela, 2013; Yamamoto

et al., 2013). Theoretically, social media exposes users to more mobilizing political information and it affords the possibility of engaging in a range of online participatory behaviors (Valenzuela, 2013). As a result, the social connections formed through social media are particularly effective at drawing social media users into online participation.

H4: Social media social capital will be positively related to online political participation.

While there is little prior evidence of a relationship between offline social capital and online political participation (see Gil de Zúñiga and colleagues [2012] for an example of a null finding), there are theoretical reasons to expect that a relationship exists. The Internet and social media have arguably facilitated the rise of new kinds of political organizations that rely more heavily on diffused social networks of affiliation and support than do traditional political organizations (Bimber et al., 2009; Gil de Zúñiga, Copeland, & Bimber, 2014). Therefore, while social networks have always been important for the mobilizing capacity of political organizations, today there are more opportunities for these organizations to tap into offline social networks using online tools (Bennett & Segerberg, 2012; Gibson & Cantijoch, 2013; Lim, 2013; Theocharis, 2013). By extension, this implies that resources derived from offline social networks increasingly provide opportunities for people to engage with politics online—for example, signing online petitions or making online donations at the recommendation of offline social ties.

H5: Offline social capital will be positively related to online political participation.

Methods

Sample

This study relies on a two-wave panel survey collected by a research team at a major research university in the United States. The survey was designed to be representative of the U.S. population over the age of 18. Respondents were selected from a previously existing online panel of more than 200,000 citizens, curated by an international polling company, AC Nielsen. Nielsen panels establish quotas to match U.S. Census statistics for age and gender pursuing national representation and generalizability. Using the online Qualtrics software, the first survey wave was collected between December 2013 and January 2014. The second wave was collected in February and March 2014. The first wave was initially distributed to 5,000 respondents. A total of 2,060 participants completed the survey, and 247 cases ended up being discarded due to high levels of incomplete data or missing information, for a final count of 1,813 cases. The final response rate according to the American Association of Public Opinion Research's response rate calculator (RR3) was 34.6% (American Association of Public Opinion Research, 2011, p. 45). The second wave retained 1,024 valid cases (57%), which falls within similar parameters of valid data seeking to respect representation integrity (see Watson & Wooden, 2006, for a discussion of retention rates for Web panels). In general, the survey respondents were slightly older, more educated, and included fewer Hispanics than the U.S. population at large. Still, the overall sample demographics are comparable to other surveys employing random collection methods (Pew Research Center, n.d.) and

are also comparable to the national population as whole (see full demographic breakdowns for this data set in Saldaña, McGregor, & Gil de Zúñiga, 2015; Weeks, Ardèvol-Abreu, & Gil de Zúñiga, 2015).

Measures

Offline Political Participation. In both waves of the survey, five questionnaire items measured on 10-point (1 = never, 10 = all the time) scales asked respondents how often, in the past 12 months, they engaged in various offline political activities, including getting involved in political groups or campaigns, participating with social movement groups, donating money to a campaign or cause, attending a protest, or attending a political rally (Wave 1: Cronbach's α = .82, M = 3.47, SD = 1.57; Wave 2: Cronbach's α = .83, M = 3.49, SD = 1.64). A change score (Wave 2—Wave 1) was also computed for use in the change-score models (M = –.01, SD = 1.25).

Voting. In both waves of the survey, two questionnaire items, measured on 10-point scales (1 = never, 10 = all the time) asked respondents how often they vote in (a) local or statewide elections and (b) federal or presidential elections (Wave 1: Spearman-Brown coefficient = .94, M = 8.11, SD = 2.97; Wave 2: Spearman-Brown coefficient = .93, M = 8.16, SD = 2.92).

Online Political Participation. Also in both waves of the survey, six questionnaire items measured on identical scales as offline participation asked respondents how often, in the past 12 months, they engaged in various online political activities, including signing or sharing an online petition, participating in an online question-and-answer session with a politician or public official, creating an online petition, and signing up online to volunteer to help with a political cause, using a mobile phone to donate money to a campaign or political cause via text message or app, and starting a political or cause-related group on a social media site (Wave 1: Cronbach's α = .81, M = 1.83, SD = 1.38; Wave 2: Cronbach's α = .84, M = 1.83, SD = 1.42). A change-score variable was also computed (M = .00, SD = 1.00).

Offline Social Capital. The two social capital variables (offline and social media) focus on the social connectedness aspect of social capital (Williams, 2006; Zhang & Chia, 2006) using previously validated measurement scales. The variable for social capital in offline settings was created using six survey items measured on 10-point scales (1 = strongly disagree, 10 = strongly agree) asking respondents about people in their communities (see Table 1 for question wording).These items were asked in both survey waves (Wave 1: Cronbach's α = .92, M = 1.95, SD = 1.76; Wave 2: Cronbach's α = .94, M = 1.93, SD = 1.85). At Wave 1, the offline social capital variable is correlated with frequency of social media use (measured on a 10-point scale asking respondents, "On a typical day, how much do you use social media") at r = .13, $p < .001$.

Social Media Social Capital. Meanwhile, the variable for social capital in social media settings was created with four survey items for each survey wave measured on similar scales and asking respondents about their social media communities (see Table 1 for question wording; Wave 1: Cronbach's α = .97, M = 2.10, SD = 1.94; Wave 2: Cronbach's α = .97, M = 2.10, SD = 1.97). These items were adapted from previous measures focusing on social capital in other online or networked media (Molyneux

Table 1
Factor analysis of offline social capital and social media social capital

Questionnaire Item	Offline Social Capital[W1]	Social MediaSocial Capital[W1]
I think people in my community feel connected to each other.	**.909**	.129
In my community, people help each other when there is a problem.	**.894**	.054
People in my community watch out for each other.	**.887**	.058
In my community, we talk to each other about community problems.	**.852**	.157
I think people in my community share values.	**.819**	.100
People in my community feel like family to me.	**.805**	.164
I frequently use social media to encourage conversations about solving community problems.	.124	**.961**
I frequently use social media to find people to solve problems in my community.	.132	**.924**
I frequently use social media to foster community values.	.091	**.912**
I frequently use social media to connect community members to each other.	.039	**.913**
Eigenvalues	5.71	3.39
Variance explained (%)	47.57	35.99
Cumulative variance explained (%)	81.57	
Cronbach's α	**.95**	.97

Notes. Bolded values indicate items loading on the same factor. W1 = Wave 1.

et al., 2015; Williams, 2006). At Wave 1, the social media social capital item is correlated with frequency of social media use at $r = .44$, $p < .001$.

Social Media Interaction. The use of social media for social interaction is an important driver of persuasion and action on social media (Diehl, Weeks, & Gil de Zúñiga, 2015). It is therefore important to include it as a control variable because it could explain both social capital and participation. Three Wave 1 survey items were used to create the social media interaction variable. Measured on 10-point scales (1 = never, 10 = all the time), these items asked respondents how frequently they use social media to stay in touch with friends and family, meet new people who share interests, and contact people they wouldn't meet otherwise (Cronbach's α = .78, $M = 3.56$, $SD = 2.33$).

Discussion Frequency. Likewise, political discussion contributes to social capital (Lake & Huckfeldt, 1998) and affects political participation (McClurg, 2006; Mutz, 2006), and therefore it is necessary to control for two dimensions of the political talk concept: discussion frequency and discussion network size. The discussion frequency variable was created from nine Wave 1 items measured on 10-point scales (1 = never, 10 = all

the time) that asked respondents how often they talk politics online or offline with their spouse/partner, family members, friends, acquaintances, strangers, neighbors they know well, neighbors they do not know well, coworkers they know well, and coworkers they do not know well. These items were averaged to create the final variable (Cronbach's α = .87; *M* = 3.27, *SD* = 1.74).

Discussion Network Size. As with discussion frequency, the size of respondents' discussion networks accounts for its influence on both social capital and political participation (Lake & Huckfeldt, 1998). Two Wave 1 items asked respondents how many people they talk about politics with in face-to-face and online settings. These items were added together (*M* = 4.36, *SD* = 16.88). This variable was highly skewed (skewness = 10.85), so a natural logarithmic transformation was performed (*M* = .33, *SD* = .37, skewness = 1.3).

News Use. News use also affects social capital and political participation (McLeod et al., 1996; Shah, Kwak, et al., 2001; Shah, McLeod, et al., 2001). The news use variable was created by taking the average of 21 Wave 1 survey items measured on 10-point scales (1 = never, 10 = all the time). These items asked respondents about their habitual use of various news media, including local, network, and cable television news and/or fake news, newspapers, radio, online-only news and/or hyperlocal news sites, online news aggregators, mobile news apps, and social media outlets such as Facebook, Twitter, Instagram, etc. These items form a reliable scale (Cronbach's α = .82, *M* = 2.92, *SD* = 1.16).

Media Trust. Media trust has been shown to amplify the effects of news use on political participation (Kaufhold, Valenzuela, & Gil de Zúñiga, 2010). The media trust variable took the average of four Wave 1 items measured on 10-point Likert-type scale (1 = not at all, 10 = a great deal) asking respondents how much they trust news from mainstream media, alternative news media, social media news, and news from online aggregators. These items also formed a reliable scale (Cronbach's α = .72, *M* = 4.28, *SD* = 1.72).

Political Interest. Several political orientations were controlled because they are related to political participation. First, political interest is a relatively consistent predictor of political participation (Kenski & Stroud, 2006; Verba et al., 1995), and was therefore controlled. It was measured with two Wave 1 items using 10-point scales (1 = not at all, 10 = a great deal) asking respondents how interested they are in politics and public affairs and how closely they pay attention to information about politics and public affairs. A split-half test shows these items form a reliable measure (Spearman-Brown ρ = .96, *M* = 6.67, *SD* = 2.70).

Strength of Partisanship. Likewise, strength of partisanship is positively related to political participation (Chadha, Avila, & Gil de Zúñiga, 2012; Kenski & Stroud, 2006) and was therefore controlled. Three Wave 1 survey items were used to create the strength of partisanship variable. These items were measured on 11-point scales (0 = strong conservative, 11 = strong liberal) and asked respondents to place themselves on the partisan spectrum in terms of party identification, social ideology, and economic ideology (Cronbach's α = .90; *M* = 5.96, *SD* = 2.60). These three items were averaged and then folded such that scores farther away from the midpoint (5) took higher values and those closer to the midpoint took smaller values (*M* = 5.95, *SD* = 2.59).

Internal Political Efficacy. A third important concept related to political participation is internal political efficacy (Niemi, Craig, & Mattei, 1991). Two survey items measured on 10-point scales were used to create the variable for internal political efficacy. These items, which were included only in Wave 1, asked respondents whether they consider themselves well-qualified to participate in politics and whether they have a good understanding of the important political issues facing the country (Spearman-Brown ρ = .87, *M* = 5.30, *SD* = 2.50).

Demographics. Several important demographic characteristics are related to political behavior (McLeod et al., 1996; Rojas & Gil de Zuñiga, 2010), and these were controlled in the analysis. These variables include age (*M* = 52.9, *SD* = 14.65), gender (49% female), education (measured on an 8-point scale ranging from some high school to doctoral degree; median response category = some college), annual household income (median response range = between $50,000 and $99,000 USD), and race (78% = White).

Results

The first hypothesis sought to determine to what extent offline social capital and social media social capital are empirically distinct. The study contended that, although they are related constructs, social media in the social media sphere is a different construct that embodies theoretical differences with respect to the offline sphere. Results from principal axes factoring with varimax rotation support this expectation. Offline social capital (Cronbach's α = .95; eigenvalue = 5.71) included six items evaluating the degree to which people feel connected to one another in the community, the perception of the community helping, talking to and watching out for one another, as well as a sense of shared values and feeling like family. Drawing from the same items but uniquely related to social capital in the social media realm, results also suggest a different, valid, and reliable factor (Cronbach's α = .97; eigenvalue = 3.39). The two constructs combined to explain a total of 81.57% of the variance (see Table 1 for complete results). These results support H1.

In addition, RQ1 asks whether offline social capital leads to social media capital more strongly than the other way around. Relying on further causal inference analysis drawing on cross-lagged correlation tests (Locascio, 1982), results indicate that social media social capital in Wave 1 predicts offline social capital in Wave 2 ($r_{\text{cross-lagged}}$ = .17) more strongly than the relationship that goes from offline social capital (Wave 1) to the proliferation of social media social capital (Wave 2; $r_{\text{cross-lagged}}$ = .06). That is, developing social capital in social media today will more strongly predict the development of offline social capital in the future than the other way around. This finding lends support to the notion of a virtuous, although asymmetrically related, circle of social capital (see Table 2).

H2 through H5 all pertain to the different ways in which social capital and political participatory behaviors may be related. Given that the study relied on two-wave panel data, different analyses were pursued to better address these hypotheses and research questions. First, the study tested the effects in a cross-sectional regression model showing the static relationships between social capital and online/offline political participation. Then, first-differences regression models are estimated, which isolate the impact of social media social capital and offline social capital on online and offline participation at the individual level drawing on intrapersonal score changes over time (see Allison, 2009). Next, the study performed an autoregressive model, which represents a much more constrained approach, as research shows that prior behavior is the strongest predictor of

Table 2
Cross-lagged Pearson's correlation of offline social capital and social media social capital

Pearson Coefficient Effects	$r_{\text{cross-lagged}}$	p-value
Offline Social Capital (W1) → Social Media Social Capital (W2)	.06	.001
Social Media Social Capital (W1) → Offline Social Capital (W2)	.17	.001

Notes. Path estimates are unstandardized coefficients. Indirect effects based on bootstrapping to 5,000 samples with biased corrected confidence intervals. The effects of demographic variables (age, gender, education, race, and income), sociopolitical antecedents (political efficacy, strength of partisanship, discussion network size, political knowledge), and both general news consumption and social media for news (or social interaction) were included as control variables. Sample Wave 1 (W1) = 1,814; Sample Wave 2 (W2) & Fixed effect model = 1,017. The cross-lagged correlations were calculated using the following formula:

$$\rho_{y_t x_2 \cdot x_1} = \frac{\rho_{y_t x_2} - \rho_{x_1 y_t}\rho_{x_1 x_2}}{\sqrt{\left(1 - \rho_{x_1 y_t}{}^2\right)\left(1 - \rho_{x_1 x_2}{}^2\right)}}$$

future behavior (Aarts, Verplanken, & Van Knippenberg, 1998). In this case, the model controlled for prior political participatory behavior in Wave 1 when predicting future participation in Wave 2. Relationships with voting were estimated separately using cross-sectional models in Wave 1 and Wave 2, as well as with a lagged panel model. Finally, Huber-White robust standard errors were estimated for all models.

The cross-sectional models explain 47.3% of the variance for online political participation and 42.6% for offline participation (see Table 3).Both offline social capital ($\beta = .056$, $p < .05$) and social media social capital ($\beta = .337$, $p < .001$) are related to online political participation, but only social media social capital is related to offline political participation ($\beta = .327$, $p < .001$). These models were re-estimated using Huber-White robust standard errors, and results are substantively similar. For both outcomes, offline social capital (for online participation: B = .033, $SE_{HW} = .015$, $p < .05$; for offline participation: B = .070, $SE_{HW} = .021$, $p < .001$) and social media social capital (for online participation: B = .239, $SE_{HW} = .032$, $p < .001$; for offline participation: B = .301, $SE_{HW} = .043$, $p < .001$) are significantly and positively related.

The first-differences model explained 24.9% of the variance for online political participation and 18.2% of offline political participation (see Table 4). Offline social capital is positively related to online participation ($\beta = .113$, B = .064, $SE_{HW} = .016$, $p < .001$), but not offline political participation. Meanwhile, social media social capital positively predicts online participation ($\beta = .188$, B = .185, $SE_{HW} = .034$, $p < .001$) and offline participation ($\beta = .212$, B = .173, $SE_{HW} = .042$, $p < .001$). As can be expected, prior levels of political participation were the strongest predictors of the outcome variables in the autoregressive framework (online, $\beta = .494$, $p < .001$; offline, $\beta = .652$, $p < .001$). In addition, offline participation also positively predicted online participation ($\beta = .159$, $p < .001$). Among social capital variables, only social media social capital positively predicted online participation ($\beta = .117$, B = .086, $SE_{HW} = .033$, $p < .001$) and offline participation ($\beta = .097$, B = .094, $SE_{HW} = .041$, $p < .001$), whereas offline social capital didn't exhibit any relationships with participation (online, $\beta = –.028$, B = –.021, $SE_{HW} = .014$, *n.s.*; offline, $\beta = .003$, B = –.005, $SE_{HW} = .019$, *n.s.*). The autoregressive

Table 3
Cross-sectional (W1) regression models testing offline social capital and social media social capital on political participation

	Online PoliticalParticipation			Offline PoliticalParticipation		
Variable	β	B (SE)	(Huber-White SE)	β	B (SE)	Huber-White SE
Intercept	–	.046 (.215)	(.236)	–	−1.039 (.327)**	(.305)***
Block 1: Demographics						
Age	–.029	–.003 (.002)	(.003)	.043	.005 (.003)	(.003)
Gender (1 = female)	–.052	–.143 (.066)	(.066)*	–.060*	–.211 (.088)*	(.084)*
Education	–.008	–.008 (.023)	(.023)	.045	.055 (.030)	(.034)
Income	–.058**	–.056 (.024)*	(.023)*	–.003	–.003 (.032)	(.029)
Race (1 = White)	–.024	–.079 (.078)	(.085)	–.008	–.034 (.105)	(.118)
ΔR^2	.021			.027		
Block 2: Media Antecedents						
Discussion Network Size	–.034	–.133 (.107)	(.120)	.077**	.379 (.145)**	(.182)*
Discussion Frequency	.232***	.188 (.026)***	(.032)***	.165***	.171 (.034)***	(.041)***
Media Trust	–.063*	–.051 (.023)*	(.026)*	–.058	–.060 (.031)	(.033)
News Use	.223***	.280 (.038)***	(.055)***	.212***	.341 (.051)***	(.064)***
Social Media Use Interaction	.016	.010 (.018)	(.018)	–.039	–.030 (.024)	(.024)
ΔR^2	.377			.335		
Block 3: Political Antecedent						
Political Interest	–.012	–.006 (.017)	(.017)	–.044	–.029 (.023)	(.021)
Strength of Partisanship	.046	.024 (.013)	(.014)	.078**	.054 (.017)**	(.019)**

Internal Political Efficacy	.131***	.070 (.017)***	(.016)***	.132***	.091 (.023)***	(.023)***
ΔR^2	.015			.018		
Block 4: Social Capital						
Offline Social Capital	.054*	.032 (.015)*	(.015)*	.092***	.070 (.021)***	(.021)***
Social Media Social Capital	.354***	.255 (.023)***	(.033)***	.327***	.301 (.031)***	(.043)***
ΔR^2	.069			.126		
Total R^2	.482			.426		

Notes. Sample size = 1,017. W1 = Wave 1. Cell entries are final-entry ordinary least squares (OLS) standardized beta coefficients (β), unstandardized beta coefficients (B), standard errors (SE), and robust standard errors (Huber-White SE).

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

Table 4
First differences (W2—W1) regression models testing offline social capital and social media social capital on political participation

	Online PoliticalParticipation$^{W2\text{-}W1}$			Offline PoliticalParticipation$^{W2\text{-}W1}$		
Variable	β	B (SE)	(Huber-White SE)	β	B (SE)	(Huber-White SE)
Intercept	–	.020 (.030)	(.033)	–	–.029 (.043)	(.048)
Block 1: Media Antecedents $^{W2\text{-}W1}$						
Discussion Network Size	–.011	–.044 (.117)	(.131)	.040	.211 (.151)	(.188)
Discussion Frequency	.191***	.146 (.022)***	(.029)***	.177***	.170 (.029)***	(.035)***
Media Trust	.016	.013 (.024)	(.024)	.050	.051 (.030)	(.036)
News Use	.238***	.336 (.042)***	(.072)***	.142***	.251 (.054)***	(.081)**
Social Media Use Interaction	.012	.008 (.021)	(.026)	.000	.000 (.027)	(.033)
ΔR^2	.189			.132		
Block 2: Political Antecedent $^{W2\text{-}W1}$						
Political Interest	–.004	–.002 (.013)	(.013)	–.001	.000 (.017)	(.017)
Strength of Partisanship	.015	.016 (.029)	(.032)	–.002	–.002 (.037)	(.039)
Internal Political Efficacy	.102***	.061 (.017)***	(.018)***	.095***	.071 (.022)**	(.023)**
ΔR^2	.015			.011		
Block 3: Social Capital $^{W2\text{-}W1}$						
Offline Social Capital	.106***	.061 (.016)***	(.021)***	.057	.041 (.021)	(.025)
Social Media Social Capital	.193***	.128 (.021)***	(.034)***	.209***	.173 (.027)***	(.042)***
ΔR^2	.043			.039		
Total R^2	.247			.182		

Notes. Sample size = 1,017. W1 = Wave 1. W2 = Wave 2. Cell entries are final-entry ordinary least squares (OLS) standardized beta coefficients (β), unstandardized beta coefficients (B), standard errors (SE), and robust standard errors (Huber-White SE).
** $p < .01$. *** $p < .001$.

Table 5
Autoregressive models testing offline social capital and social media social capital on political participation

	Online Political Participation^{W2}			Offline Political Participation^{W2}		
Variable	β	B (SE)	(Huber-White SE)	β	B (SE)	(Huber-White SE)
Intercept	–	.6532 (.206)**	(.236)*	–	–.210 (.260)	(.297)
Block 1: Demographics						
Age	.005	.001 (.002)	(.002)	.056	.007 (.003)*	(.003)*
Gender (1 = female)	–.001	–.004 (.062)	(.063)	–.010	–.039 (.079)	(.080)
Education	–.011	–.011 (.021)	(.021)	.005	.007 (.027)	(.029)
Income	–.024	–.024 (.022)	(.022)	.006	.008 (.028)	(.027)
Race (1 = White)	–.020	–.069 (.074)	(.086)	–.023	–.100 (.094)	(.107)
ΔR^2	.019			.021		
Block 2: Media Antecedents ^{W1}						
Discussion Network Size^{W1}	.027	.106 (.103)	(.111)	.054*	.279 (.130)*	(.156)
Discussion Frequency^{W1}	.047	.039 (.025)	(.028)	.020	.021 (.031)	(.035)
Media Trust^{W1}	.033	.028 (.022)	(.020)	.013	.014 (.028)	(.025)
News Use^{W1}	.008	.010 (.037)	(.047)	–.010	–.017 (.046)	(.059)
Social Media Use Interaction ^{W1}	–.017	–.010 (.017)	(.016)	–.005	–.004 (.022)	(.021)
ΔR^2	.262			.233		
Block 3: Political Antecedent ^{W1}						
Political Interest^{W1}	–.017	–.009 (.017)	(.016)	–.003	–.002 (.021)	(.020)

(*Continued*)

Table 5
(*Continued*)

Variable	Online Political Participation^{W2}			Offline Political Participation^{W2}		
	β	B (SE)	(Huber-White SE)	β	B (SE)	(Huber-White SE)
Strength of Partisanship^{W1}	.006	.004 (.012)	(.013)	.040	.028 (.015)	(.017)
Internal Political Efficacy^{W1}	.026	.014 (.017)	(.015)	–.018	–.013 (.021)	(.020)
ΔR^2	.009			.012		
Block 4: Participation^{W1}						
Offline Participation^{W1}	.128***	.103 (.029)***	(.034)***	.647***	.676 (.037)***	(.056)***
Voting^{W1}	–.034	–.016 (.012)	(.013)	–.002	–.001 (.015)	(.014)
Online Participation^{W1}	.548***	.564 (.039)***	(.062)***	.047	.063 (.049)	(.079)
ΔR^2	.272			.318		
Block 4: Social Capital^{W1}						
Offline Social Capital^{W1}	–.036	–.022 (.015)	(.014)	–.006	–.004 (.019)	(.019)
Social Media Social Capital ^{W1}	.099***	.074 (.023)***	(.032)*	.095***	.092 (.029)**	(.041)*
ΔR^2	.005			.004		
Total R^2	.567			.588		

Notes. Sample size = 1,017. W1 = Wave 1. W2 = Wave 2. Cell entries are final-entry ordinary least squares (OLS) standardized beta coefficients (β), unstandardized beta coefficients (B), standard errors (SE), and robust standard errors (Huber-White SE).

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

Table 6
Cross-sectional (W1 and W2) and lagged regression models testing offline and social media social capital on voting

	Wave 1 (W1 → W1)			Wave 2 (W2 → W2)			Lagged Panel (W1 → W2)		
Variable	β	B (SE)	(Huber-White SE)	β	B (SE)	(Huber-White SE)	β	B (SE)	(Huber-White SE)
Intercept	–	.106 (.594)	(.553)	–	−.343 (.618)	(.583)	–	.160 (.584)	(.550)
Block 1: Demographics									
Age	.214***	.043 (.006)***	(.006)***	.224***	.044 (.006)***	(.006)***	.213***	.042 (.006)***	(.006)***
Sex (1 = Female)	.061*	.359 (.160)*	(.165)*	.053	.309 (.161)	(.173)	.053	.306 (.158)	(.165)
Education	.082**	.168 (.055)**	(.057)**	.078**	.157 (.055)**	(.059)*	.080**	.160 (.054)**	(.056)**
Income	.084**	.175 (.058)**	(.061)**	.079**	.160 (.058)**	(.063)**	.095***	.193 (.057)***	(.058)***
Race (1 = White)	.091***	.651 (.191)***	(.220)**	.137***	.962 (.193)***	(.222)***	.123***	.862 (.188)***	(.219)***
ΔR^2	.180			.181			.181		
Block 2: Media Antecedents									
Discussion Network Size	.038	.312 (.263)	(.223)	.053	.634 (.363)	(.372)	.016	.130 (.259)	(.229)
Discussion Frequency	.019	.033 (.063)	(.063)	.071*	.126 (.062)*	(.067)	.027	.046 (.062)	(.065)
Media Trust	.037	.065 (.056)	(.059)	.027	.046 (.057)	(.058)	.065*	.112 (.055)*	(.057)*
News Use	–.014	–.037 (.092)	(.090)	.025	.067 (.098)	(.096)	–.065	–.171 (.091)	(.090)
Social Media Interaction	.037	.048 (.044)	(.045)	.028	.036 (.046)	(.049)	.039	.048 (.043)	(.044)
ΔR^2	.054			.052			.053		

(*Continued*)

Table 6
(*Continued*)

Variable	Wave 1 (W1 → W1) β	Wave 1 (W1 → W1) B (SE)	(Huber-White SE)	Wave 2 (W2 → W2) β	Wave 2 (W2 → W2) B (SE)	(Huber-White SE)	Lagged Panel (W1 → W2) β	Lagged Panel (W1 → W2) B (SE)	(Huber-White SE)
Block 3: Political Antecedents									
Political Interest	.270***	.297 (.043)***	(.051)***	.102***	.156 (.047)***	(.045)***	.266***	.287 (.042)***	(.050)***
Strength of Partisanship	–.021	–.024 (.031)	(.028)	–.001	–.002 (.032)	(.030)	–.009	–.010 (.031)	(.027)
Internal Political Efficacy	.123***	.142 (.042)***	(.048)**	.243***	.287 (.039)***	(.040)***	.116**	.132 (.042)**	(.047)**
ΔR^2	.088			.066			.083		
Block 4: Social Capital									
Offline Social Capital	.071*	.091 (.038)*	(.039)*	.072*	.089 (.038)*	(.039)*	.080**	.101 (.037)	(.038)**
Social Media Social Capital	–.078*	–.120 (.056)*	(.054)*	–.146***	–.218 (.057)***	(.059)***	–.042	–.064 (.055)	(.050)
ΔR^2	.006			.012			.005		
Total R^2	.328			.311			.322		

Notes. Sample size = 1,017. W1 = Wave 1. W2 = Wave 2. Cell entries are final-entry ordinary least squares (OLS) standardized beta coefficients (β), unstandardized beta coefficients (B), standard errors (SE), and robust standard errors (Huber-White SE).
* $p < .05$. ** $p < .01$. *** $p < .001$.

models explained 55.1% of variance for online participation and 58.5% for offline participation (see Table 5).

Results for voting are presented separately in Table 6. All three models in the table explain relatively low levels of variance (Wave 1: .6%, Wave 2: 1.2%, lagged: .5%). Offline social capital is positively related to voting in all three models (Wave 1: $\beta = .071$, $B = .091$, $SE_{HW} = .039$, $p = .05$; Wave 2: $\beta = .072$, $B = .089$, $SE_{HW} = .039$, $p = .05$; Lagged: $\beta = .080$, $B = .101$, $SE_{HW} = .038$, $p = .01$). Meanwhile, social media social capital is negatively related in the cross-sectional models (Wave 1: $\beta = -.078$, $B = -.120$, $SE_{HW} = .054$, $p < .05$; Wave 2: $\beta = -.146$, $B = -.218$, $SE_{HW} = .059$, $p < .05$), but unrelated in the lagged model.

Taken together, results partially support H2. Offline social capital is not significantly related to voting, but, surprisingly, it is unrelated to offline political participation. However, offline social capital is positively related to online participation, in support of H5. As for social media social capital, results support the idea that it is related to both offline (H3a) and online participation (H4), but not to voting (H3b).

Discussion

The emergence of social media has arguably changed the nature of social capital and the ways in which it is generated from social relationships (Williams, 2006). As the nature of social connectedness evolves, questions arise about whether social media social capital is empirically distinct from social capital generated in offline venues, and whether it has different patterns of effects on political participation.

The results of this study provide evidence that social media social capital is empirically distinct from offline social capital. Using principal axes factory analyses, the study shows that survey items tapping social capital formed on social media form a distinct empirical construct than items tapping offline social capital. Thus, while offline social capital, as previously theorized in the literature (Bourdieu, 1985; Lin, 2008), continues to be a robust benchmark on how strongly people connect in their communities, share values, and watch out for one another, the results of this study suggest that the platforms people use to connect with one another affect the nature of the value derived from those relationships (Molyneux et al., 2015; Williams, 2006).

The study also tested the relationship between offline social capital and social media social capital as a virtuous circle over time. Although both constructs are, as can be expected, interrelated, social media social capital tends to predict offline social capital more strongly than the other way around. In other words, the way people make connections, foster their community values, and seek to talk about their community problems on social media predicts whether these citizens will continue to do so in their offline communities over time. Yet, sharing values, helping one another, or watching out for one another in one's offline communities does not as strongly predict that they will continue to do so in the social media context. Offline social capital and social media social capital represent a symbiotic, yet asymmetrical, virtuous circle.

This finding—that social media social capital predicts offline social capital over time more strongly than the reverse—may also help to clarify why social media social capital influences people's participatory behaviors online and offline more so than offline social capital. It may be due to (a) the direct influence social media social capital has over both online and offline political participation and (b) the impact social media social capital has on offline social capital over time. Future research should delve deeper into this mediating mechanism.

Diverse and extensive tests based on panel data (i.e., first-differences and autoregressive models) also clarify the relationship between these distinct dimensions of social capital and people's participatory political behaviors. Consistent with previous literature, offline social capital is a robust predictor of voting (Gil de Zúñiga et al., 2012, 2014; Giugni et al., 2014; Gustafsson, 2012; Skoric & Zhu, 2015; Zhang & Chia, 2006). However, offline social capital does not predict other forms of political participation over time once previous levels of participation are accounted for in the models. Social media social capital,on the other hand, predicts both offline and online political participation over time even while controlling for prior levels of participation. Thus, interestingly, social media social capital is not only related to online political participation but also to political participation that occurs outsidethe digital sphere. This means that community relationships generated through social media are not only predictors of online political participation, as previous research has shown (Gil de Zúñiga et al., 2012; Valenzuela, 2013; Yamamoto et al., 2013), but also are predictors of traditional political participation. This result lends support to the theoretical assumption that social networks curated and maintained in social media permeate to the offline world and facilitate face-to-face political coordination that fuels offline political action (Bakker & de Vreese, 2011; Bennett & Segerberg, 2012; Bennett, Segerberg, & Walker, 2014; Eltantawy & Weist, 2011; Gleason, 2013; Howard & Parks, 2012; Lim, 2012, 2013; Theocharis et al., 2015). However, results show that this phenomenon may not extend to the voting booth. In fact, some tests show a negative relationship between social media social capital and voting, while others show no relationship. Therefore, while social media social capital may promote other forms of offline participation such as protesting, it may actually discourage voting in major elections.

One reason that social media social capital is related to political participation in multiple communicative realms is that social media reduce barriers to participation—such as time and economic resources (Verba et al., 1995)—by enabling a series of interconnected behaviors such as developing political ties with other members of the community, donating money to a cause, or signing a petition addressed to the authorities. Another feature that may foster this relationship between social media social capital and participation has to do with the interactive character of these digital platforms. As has been studied in the relationship between news and audiences (Holton, Coddington, Lewis, & Gil de Zúñiga, 2015), online relationships facilitated or maintained by social media enable higher levels of personal and social reciprocity. In turn, reciprocity would allow for a smoother exchange of information, common values, and resources among users, contributing to the creation of an environment that fosters actions related to political participation.

These results are limited in several important ways. First, although the panel data used in this study establish causal order with regards to the relationship between social media social capital and political participation, it cannot control for every potential confounding variable. Further analysis of similar panel data sets is warranted to reinforce these findings. Second, while the measurement strategy for the two social capital constructs is based on prior literature (Gil de Zúñiga et al., 2012; Molyneux et al., 2015; Williams, 2006; Zhang & Chia, 2006; Zhong, 2014;), future research would ideally include the items validated in this study and combine those with a more diverse array of questions that reflect the specific affordances of offline and online environments. Third, this study has focused on the adult population of the United States, but it is possible that different subsets of the population could exhibit different patterns of social capital and/or political participation. More specifically, results are likely colored by the institutional structure of the American

political system (a two-party presidential system), as well as by cultural norms of interpersonal connectivity and community-based interactivity. Future research should focus specifically on subgroups of populations; for example, young people could be especially likely to form social capital through social media sites because they use them more frequently, while older people, on the other hand, could be more likely to build social capital and engage offline. In addition, future research should focus on testing specific dimensions of changing social connections on social media, including network structure, the range of media exposure, and the potential to change opinions.

Despite these limitations, this study provides relatively strong evidence that social media social capital has different patterns of effects on offline and online political participation than social capital developed in offline venues. Arguably, these different patterns occur because social media afford new ways for people to connect to one another and, therefore, they enable the development of new kinds of value in social relationships. This study provides a useful framework for understanding how social connectedness and political action have changed in this kind of environment relative to offline settings, and more generally, for conceptualizing social capital in new media environments as they continue to emerge.

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Supplemental Material

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