





Exposure to Political Disagreement in Social Media Versus Face-to-Face and Anonymous Online Settings

Matthew Barnidge


To cite this article: Matthew Barnidge (2017) Exposure to Political Disagreement in Social Media Versus Face-to-Face and Anonymous Online Settings, Political Communication, 34:2, 302-321, DOI: [10.1080/10584609.2016.1235639](https://doi.org/10.1080/10584609.2016.1235639)



To link to this article: <https://doi.org/10.1080/10584609.2016.1235639>

 View supplementary material 

 Published online: 31 Oct 2016.

 Submit your article to this journal 

 Article views: 887

 View related articles 

 View Crossmark data 

 Citing articles: 1 View citing articles 

Exposure to Political Disagreement in Social Media Versus Face-to-Face and Anonymous Online Settings

MATTHEW BARNIDGE

This article investigates political disagreement on social media in comparison to face-to-face and anonymous online settings. Because of the structure of social relationships and the social norms that influence expression, it is hypothesized that people perceive more political disagreement in social media settings versus face-to-face and anonymous online settings. Analyses of an online survey of adults in the United States show that (a) social media users perceive more political disagreement than non-users, (b) they perceive more of it on social media than in other communication settings, and (c) news use on social media is positively related to perceived disagreement on social media. Results are discussed in light of their implications for current debates about the contemporary public sphere and directions for future research.

Keywords political disagreement, social media, cross-cutting exposure, political discussion, political talk, news media, news use

Social media are important new venues for political communication because they connect individuals with civil society through egocentric social networks (Rojas, 2015), and this article examines the extent to which these networks facilitate political disagreement in comparison to other communicative settings. In face-to-face settings, disagreement is relatively uncommon (Mutz, 2006; Mutz & Martin, 2001) because, despite the fact that face-to-face relationships are characterized by overlapping dimensions of social similarity (Huckfeldt, Johnson, & Sprague, 2004; Walsh, 2004), discussion is bounded by local context (Huckfeldt et al., 2004) and social norms often discourage dissent (Eliasoph, 1998; Walsh, 2004). Meanwhile, anonymous online settings—including message boards and community forums such as reddit.com—display high degrees of interest-based homogeneity (Davis, 1998; Hill & Hughes, 1998), which means that people tend to visit like-minded discussion sites (Sunstein, 2007) and interact with people with whom they largely agree (Gaines & Mondak, 2009; Wojcieszak & Mutz, 2009).

Social media such as Facebook and Twitter, on the other hand, articulate multidimensional relationships that are not necessarily defined by political preferences or bounded by geographical space (Barberá, 2014; Brundidge, 2010; Ellison, Steinfield, & Lampe, 2007) and promote cognitive processes of elaboration and reflection (Cho et al., 2009; Shah et al., 2007) that result in the perception of disagreement. Therefore, social media likely

Matthew Barnidge is a Postdoctoral Researcher, Department of Communication, University of Vienna.

Address correspondence to Matthew Barnidge, Althanstraße 14 (UZA II), Room 3.05, Vienna 1090, Austria. E-mail: mbarni109@gmail.com

facilitate political disagreement (Bakshy, Messing, & Adamic, 2015; Barberá, 2014; Barnidge, 2015; Kim, 2011; Kim, Hsu, & Gil de Zúñiga, 2013). Employing a survey of adults in the United States, this article tests the claim that social media facilitate the perception of political disagreement in comparison to face-to-face and anonymous online settings, and, furthermore, whether news use on social media helps to explain the perception of disagreement in these contexts.

Political Disagreement

Political disagreement is the perception of difference resulting from an encounter with an individual or entity in a setting in which it is possible to interact via communication, and it holds a central place in theories of deliberative democracy because it encourages reflection about previously held ideas (Price, Cappella, & Nir, 2002) and promotes tolerance of oppositional views (Mutz, 2006). But differences in the conceptualization and operationalization of political disagreement have led to divergent conclusions about how often individuals encounter political disagreement in their daily lives (Klofstad, Sokhey, & McClurg, 2013). The now-classic studies on political disagreement defined it either as the lack of congruence between two discussants (e.g., Huckfeldt et al., 2004), as judged by some third-party observer (e.g., a researcher), or the perception of difference with one's own political views (e.g., Mutz, 2006), as judged by respondents themselves. The two approaches differ in terms of *whose* judgment to trust about whether two individuals disagree, and this difference is not trivial: Congruence-based studies generally find more evidence of disagreement, while perception-based studies usually find less. That is, third-party observers tend to report more political difference, while the subjects being observed typically report less.

The present study adopts the latter approach (i.e., the perception-based approach) to observing political disagreement for several reasons. First, a perception-based approach allows for a distinction between the perception of difference and exposure to politically cross-cutting information. While exposure to cross-cutting information may be necessary for the perception of disagreement, individuals could potentially be exposed to cross-cutting information without perceiving disagreement. And, after all, if individuals do not perceive that disagreement has occurred, it will have less of an effect on their behavior (Mutz, 2006). While political incongruence has been shown to have subtle effects on voting preferences (Huckfeldt & Sprague, 1995), the *experience* of disagreement has more dramatic effects on the ways people engage with politics (Mutz, 2006). In addition, perception-based measures offer stricter standards for hypothesis testing than congruence-based measures because they are less susceptible to type II error—that is, the reporting of a false positive result that occurred because a third party introduced variability and/or measurement error into the observation process.

Cross-Cutting Information Across Communication Settings

Cross-cutting exposure is an important antecedent, as it is the starting point in the process of perceiving political disagreement. Prior research points toward two social factors that facilitate or limit exposure to cross-cutting information: the multidimensionality of social affiliation and social norms of discussion and dissent. First, research shows that exposure to cross-cutting views is more likely to occur where social affiliation is not strictly defined by political interests or preferences (Gaines & Mondak, 2009; Huckfeldt et al., 2004; Wellman & Gulia, 1999; Wojcieszak & Mutz, 2009). In other words, people are more likely to

encounter cross-cutting views from people with whom they affiliate for non-political reasons. Second, social norms that govern specific communicative settings can also encourage or discourage cross-cutting views (Eliasoph, 1998; MacKuen, 1990; Walsh, 2004). In other words, specific groups and individuals establish particular tendencies when it comes to expressing dissent, depending on the nature and purpose of social interaction.

These two factors—the multidimensionality of social affiliation and social norms—also provide useful dimensions along which to compare various communication settings in terms of their likelihood to promote exposure to cross-cutting views. Face-to-face relationships are characterized by relatively high levels of multidimensionality in social affiliation (Huckfeldt et al., 2004). Although people exhibit selectivity in social affiliation, politics is not always at the forefront of people's minds when choosing discussion partners, and two individuals are more likely to disagree about politics in these cases (Huckfeldt et al., 2004). Therefore, interpersonal social networks tend to sustain overlapping and multidimensional patterns of social affiliation, which may promote disagreement. However, at the same time, social norms often discourage disagreement in face-to-face conversation. Most individuals seek common ground with discussion partners (Conover, Searing, & Crewe, 2002; MacKuen, 1990; Walsh, 2004), and many social and political groups actively discourage disagreement (Eliasoph, 1998). Thus, face-to-face settings exhibit a high degree of multidimensionality in social affiliation, but are also governed by social norms that may limit disagreement.

Anonymous online media—message boards or sites such as reddit.com, for example—exhibit comparatively lower levels of multidimensionality in social affiliation. Research shows a tendency toward interest-based selectivity on these online media, which means that people migrate to particular forums for specific reasons (Wellman & Gulia, 1999). When it comes to politics, people tend to visit like-minded discussion forums, which are characterized much more by agreement than by disagreement (Davis, 1998; Hill & Hughes, 1998; Sunstein, 2007). The prominent exception is sites not specifically dedicated to politics (Gaines & Mondak, 2009; Wojcieszak & Mutz, 2009), but these sites are exceptional precisely because political discussion occurs with social ties not specifically selected for politics. In addition to low levels of multidimensionality in social affiliation, anonymous online media also feature social norms that often discourage disagreement. For example, disagreement is often met by “flaming” or “ad hominem” attacks—a way for those in the majority to police the norms of the message board (Davis, 1998; Hill & Hughes, 1998). Of course, these patterns of interest-based selectivity and social norms do not mean that disagreement never occurs; in fact, flaming and ad hominem attacks are, in and of themselves, indications that disagreement has occurred. However, these behaviors also discourage disagreement from occurring again in the future by establishing that it is largely unwelcome on ideologically homogeneous discussion forums. Thus, while disagreement does occur in anonymous online settings, individuals are likely exposed to less cross-cutting information than they are in face-to-face settings.

In comparison to both face-to-face and anonymous online settings, social media likely promote exposure to cross-cutting information because they (a) exhibit higher levels of multidimensionality in social affiliation and (b) are governed by social norms that do not discourage disagreement. Most people use social media to articulate social connections rather than to establish connections with new people (although some sites, such as Twitter, are more commonly used for this purpose than others, such as Facebook or Instagram; boyd & Ellison, 2007; Ellison et al., 2007), and therefore social media networks are characterized by the same overlapping dimensions of social affiliation as face-to-face settings. But, in addition, social media articulate relationships that cut across geographic

obstacles for information sharing and discussion (Brundidge, 2010), making a wider range of political considerations more salient on a day-to-day basis (Kwon, Stefanone, & Barnett, 2014). Therefore, social media diversify communication within social networks even if they don't diversify social networks themselves, with the result that individuals are more frequently exposed to information from across the political spectrum (Bakshy et al., 2015; Barberá, 2014; Barnidge, 2015; Brundidge, 2010; Kim, 2011; Kim et al., 2013). Furthermore, the norms governing social media tend to promote information sharing and commenting on political posts (Bakshy, Rosenn, Marlow, & Adamic, 2012; Brundidge, 2010; Loader & Mercea, 2011), and interpersonal recommendations for news articles may trump partisan news cues in terms of informational selectivity (Messing & Westwood, 2014). Thus, social media networks exhibit high degrees of multidimensionality in social affiliation, and social norms encourage posting and discussion about politics. Therefore, social media settings likely promote exposure to cross-cutting information in comparison to both face-to-face and anonymous online settings.

There are two important counter-arguments to the claim that social media expose people to more cross-cutting information than other settings. The *filter bubble* argument (Pariser, 2011) suggests that the algorithms social media sites (especially Facebook) employ may filter out undesirable posts. According to this logic, social media users would not be exposed to cross-cutting information in the first place. Meanwhile, the *user filtration* argument suggests that users themselves filter out undesirable posts by hiding, unfriending/unfollowing, or blocking others (e.g., John & Dvir-Gvirsman, 2015; Malinen, 2015; Noel & Nyhan, 2011). However, despite these compelling arguments, recent evidence suggests that people are exposed to more cross-cutting information *despite* algorithmic or user-based filtration, which means that while these behaviors may limit cross-cutting exposure to a certain extent, people are still exposed to more cross-cutting information on social media than they are in other settings.

Engagement With Social News and the Perception of Disagreement

Recent research suggests that social media may promote news use. About 50% of adult Internet users in the United States get news from social media (Mitchell, Gottfried, Kiley, & Matsa, 2014), and there is a positive relationship between general use and news use in various political contexts (Gil de Zúñiga, Jung, & Valenzuela, 2012; Valenzuela, Arriagada, & Scherman, 2012). This development is important because news use is associated with cognitive reflection and elaboration, and prior research shows that these cognitive processes mediate the relationship between news use and subsequent perceptions, changes in opinion or attitudes, or behavior (Cho et al., 2009; Shah et al., 2007). And while this study doesn't test these processes directly, they could potentially facilitate the perception of political disagreement.

In offline environments, these cognitive processes are greatly aided by political discussion—that is, *direct* engagement with cross-cutting news and social opinion through discussion and/or commentary with others. And while research shows that news use on social media promotes political expression (Gil de Zúñiga et al., 2012; Valenzuela et al., 2012), other recent research suggests that commenting on news articles is relatively rare (Hampton et al., 2014). However, social media users do not necessarily need to comment on these threads in order to perceive that they disagree with others; rather, they can “lurk” around the conversation and get a sense of what others think and feel about news articles through a process called social opinion monitoring (Kwon et al., 2014; Schulz & Roessler, 2012). While people have always monitored their social environments for political opinion

(Noelle-Neumann, 1993), social media arguably enhance people's ability to do so because these platforms provide opinion indicators in both aggregated (i.e., "likes" or "shares") and individual form (i.e., comments). These social media affordances expose people to more indicators of social opinion (Schulz & Roessler, 2012), which gives people more opportunities to *indirectly* engage via cognitive elaboration and reflection (Cho et al., 2009) and therefore to perceive political disagreement (Barnidge, 2015).

Two social-psychological theories help to explain why cognitive elaboration and reflection could result in the perception of political disagreement, and while these theories also apply to communication in non-social-media settings, they may operate according to different dynamics given the ability to indirectly engage with social opinion via social cues embedded in these platforms. First, social judgment theory holds that people have "latitudes" of rejection and acceptance for political ideas (Sherif & Hovland, 1961). If an individual determines that an idea falls outside of his or her latitude of acceptance, the individual will be more likely to perceive disagreement with the source of the idea. Second, social identity theory proposes that the presence of an "out-group" makes "in-group" identification more likely (Tajfel, 1982). If a new political idea contains or is accompanied by visible or implicit social cues that suggest the message source belongs to an oppositional political group, an individual becomes more likely to contrast his or her own social identity with the identity of the out-group. Thus, social identity processes could also make the perception of political disagreement more likely.

Users who have larger and more diverse news networks on social media should be more likely to encounter cross-cutting information, thus increasing the chances that cognitive elaboration and reflection processes result in the perception of political disagreement. Larger, more diffuse networks are better at spreading information in social networks (Adar & Adamic, 2005; Bakshy, Karrar, & Adamic, 2009; Cha, Mislove, & Gummadi, 2009), increasing the likelihood that users will be exposed to a given news story. In addition, larger networks are also more likely to expose users to news posts from across sides of the political spectrum (Bakshy et al., 2015; Barberá, 2014) because they contain more weak ties (Grannovetter, 1973). Therefore, users who have larger and more diverse news networks on social media should encounter more cross-cutting information, thus making it more likely that cognitive elaboration and reflection processes result in the perception of political disagreement.

Because social media networks (a) increase the likelihood of exposure to cross-cutting information and (b) promote cognitive reflection and elaboration processes that result in the perception of political disagreement, this study proposes that social media facilitate the perception of political disagreement in comparison to both face-to-face and anonymous online settings. But there are various ways to formulate that belief as a prediction. The first approach involves comparing individual social media users' perceived political disagreement to those same users' perceptions in other settings:

H1: Social media users will perceive more political disagreement on social media than in (a) face-to-face or (b) anonymous online settings.

By contrast, the second approach involves comparing social media users to non-users:

H2: Social media users will perceive more political disagreement than non-users.

Assuming that news networks and news use largely drives exposure and promotes cognitive processes, it follows that social media news use, news network size, and news network diversity will be positively related to political disagreement on social media:

H3: Among social media users, (a) social media news use, (b) social media news network size, and (c) social media news network diversity will be positively related to the perception of political disagreement on social media.

Methods

Sample and Data

Data were collected between March 26 and March 29, 2015 using an online survey panel administered by a private company, Survey Sampling International (SSI).¹ The sample was designed to reflect the population of adult (age 18+) Internet users in the United States. Importantly, the population includes both social media users and non-users. SSI used a three-stage sampling process. First, subjects were randomly selected from an online panel constructed by SSI using geographic and demographic quotas based on age, gender, education, income, and place of residence, in such a way that they are comparable to the U.S. Census statistics for the population of interest. Next, subjects were randomly presented with screening questions asking whether respondents are over the age of 18, whether they are U.S. residents, and whether they had Internet access, in order to determine their eligibility for the study. Finally, subjects were randomly invited to take the study based on their likelihood to complete it based on their past completion of surveys. This final step is taken to maximize the likelihood of obtaining complete responses. The cleaned data set contained 649 complete responses (American Association of Public Opinion Research (AAPOR) RR3 = 32.7%). The sample reflects the U.S. adult population in terms of social media use (76% in the current sample versus 74% in a recent Pew sample; see Duggan, Ellison, Lampe, Lenhart, & Madden, 2015). About two-thirds of the sample is female (67%), reflecting recent reports that more females use social media than males (see Duggan et al., 2015). The sample tracks closely with U.S. Census population demographics for age ($M = 46.49$, $SD = 16.90$), education (35% bachelor's degree; average respondent [$M = 3.87$, $SD = 1.65$] has completed some college or associate's degree work), and income (average [$M = 2.57$, $SD = 1.55$] between \$35,000 and \$75,000 per year).

Measures

Political Disagreement. Two sets of indicators were used to measure political disagreement: name generators and general indicators. The name generators follow Mutz's (2006) now commonly used method. Respondents were asked to name the three people in their social media networks who post the most about politics. They were also asked to name the three people they talk to the most about politics in face-to-face settings. If they provided a name—or initials—to a given question, they were asked to compare (a) their political views, (b) their stances on political issues, and (c) their party preferences with the individual they named (0 = agreement and 4 = disagreement). Separate variables were created for social media ($M = 1.72$, $SD = .98$) and face-to-face responses ($M = 1.16$, $SD = .93$) by averaging responses for each name (three items each; Cronbach's α ranges

from .94 to .95 for social media items and from .92 to .93 for interpersonal items), then using available information to average across responses and within media (r ranges from .15 to .20 for social media items and from .19 to .28 for interpersonal items). Names repeated in social media and face-to-face answers were included in this measure. In addition, a combined variable was created by averaging the social media and face-to-face scores pairwise ($r = .16$). Repeat names were excluded from this measure ($M = 1.18$, $SD = .78$).

This study also includes general measures of political disagreement. Respondents completed nine questionnaire items—three per medium (social media, face-to-face, unknown others online)—about the frequency with which they encounter disagreement about (a) politics or elections, (b) news or current events, and (c) public or community issues (0 = “never” and 5 = “frequently”). The final measures took the pairwise individual means (for social media, Cronbach’s $\alpha = .93$, $M = 1.53$, $SD = 1.64$; for face-to-face, Cronbach’s $\alpha = .91$, $M = 1.68$, $SD = 1.47$; for anonymous online, Cronbach’s $\alpha = .96$, $M = 1.07$, $SD = 1.61$). A combined variable was created, averaging within-medium scores pairwise (Cronbach’s $\alpha = .71$, $M = 1.42$, $SD = 1.22$).

Social Media Use. Social media use is the primary independent variable in the analysis, and it was measured with four items per medium that asked respondents to first indicate how many days per week they used (a) Facebook and (b) Twitter, and to then indicate how many times per day (0 = “never” and 6 = “more than several times a day”) they check (a) Facebook and (b) Twitter. Within-medium correlations for these items were strong ($r = .91$ for both Facebook and Twitter). Therefore, the items were multiplied within media before the products were averaged across media ($M = 12.11$, $SD = 10.97$). A grouping variable was also created.

Social Media News Use. Social media news use is the predicted mechanism in analysis (see also, Barnidge, 2015; Kim et al., 2013; Lee, Choi, Kim, & Kim, 2014), which was measured with four items—two apiece for Facebook and Twitter, respectively—asking (a) how many days in the past week respondents read news or political commentary and (b) how much attention they paid when they did (0 = “not at all” and 5 = “a great deal”; see Eveland, Hutchens, & Shen, 2009) to combine dimensions of news use (i.e., exposure and attention) within specific media. Reception of these items was filtered based on social media use. For example, respondents who indicated they do not use Twitter did not receive any subsequent items asking about Twitter. Respondents who do not use social media (about 24%) skipped these items entirely. The items exhibited moderately strong inter-medium correlations (for Facebook, $r = .50$ and for Twitter, $r = .73$). The items were multiplied within media and then averaged across media ($M = 7.92$, $SD = 10.00$).

Social Media News Network Size. Theory suggests that social media news use acts as a mechanism because social media expand information networks (Barberá, 2014; Brundidge, 2010), and therefore it is also important to examine the role of social media news network size. Respondents were asked how many (a) family members, (b) friends, (c) coworkers or classmates, and (d) other acquaintances post news or political commentary on (a) Facebook and/or (b) Twitter. The number of people was then added together across categories for both Facebook and Twitter. Finally, the Facebook and Twitter scores then averaged to create the final variable ($M = 35.21$, $SD = 80.67$, $\min = 0.00$, $\max = 920.00$).

Social Media News Network Diversity. Theory also suggests a prominent role for social media news network diversity. The variable was created by taking the proportion of each social tie category out of the total network size. From an ecological perspective, perfect diversity would mean that the categorical proportions are equal—that is, they would all be .25. But from a socio-structural perspective, diversity refers to the prevalence of certain types of social ties over others (e.g., Grannovetter, 1973). Hence, the best measure is one that captures a weighted deviation from ecological equality (i.e., from .25). Therefore, each category's deviation from .25 was calculated and assigned the following weights: family members = $\times -1$, friends = $\times -.5$, coworkers or classmates = $\times 1$, other acquaintances = $\times 1$. The measure thus considers coworkers, classmates, and acquaintances to be more diverse than friends and family ($M = 0.29$, $SD = 0.22$).

Communication Covariates. *Social media political messaging* was measured using 16 questionnaire items about the (a) number of people (max = 200) and (b) frequency (0 = “never” and 4 = “very often”) with which they discuss politics on social media with four categories of people: (a) family members, (b) friends, (c) coworkers or classmates, and (d) other acquaintances on (a) Facebook and (b) Twitter. The number of people was multiplied by the frequency of talk within each category (for Facebook, $.17 < r < .26$ and for Twitter, $.24 < r < .44$), then averaged pairwise across media so that like categories were combined ($.34 < r < .88$), and then finally averaged pairwise across categories ($.38 < r < .76$; $M = 19.40$, $SD = 56.13$). The *face-to-face political talk* variable mimicked the method used for social media political messaging, with the exception that it only includes one medium (whereas the social media variable measured messaging on both Facebook and Twitter) and therefore uses eight items instead of 16. Once again, network size and frequency were multiplied within social tie categories ($.16 < r < .35$). These scores were then averaged pairwise ($.21 < r < .51$; $M = 16.51$, $SD = 31.74$). *E-mail political messaging* was measured with a single item asking how often respondents sent or received e-mails about politics in the past six months (0 = “never” and 4 = “very often”); $M = 0.92$, $SD = 1.04$). To measure *online news use*, the survey asked respondents how many days in the past week they watched, read, or listened to news online, not including news they saw on social media. Respondents who answered more than zero were asked how much attention they paid to that news (0 = “not at all” and 5 = “a great deal”). These items were multiplied to obtain the final measure ($M = 11.69$, $SD = 9.75$). These measures are based on the recommendations of Eveland and colleagues (2009). Finally, a similar method was used to measure *offline news use* on (a) television news use and (b) newspaper news use. Items were multiplied within media (for television, $r = .60$, and for newspapers, $r = .53$) and then averaged to obtain the final measure ($M = 9.98$, $SD = 11.23$).

Political Orientation Controls. *Political interest* was measured with two questionnaire items asking respondents how interested they are in local or regional politics and national politics (0 = “not at all” and 5 = “very”). These items were averaged ($r = .78$, $M = 2.92$, $SD = 1.48$). *Political knowledge* was measured with four items. Scores were coded as either right (1) or wrong (0; category includes “don’t know” answers) and added together ($M = 2.16$, $SD = 1.17$). *Political efficacy* was measured with two items taken from the classic political science scale. These two items were highly correlated ($r = .78$) and therefore averaged ($M = 2.03$, $SD = 1.09$). *Strength of political ideology* used standard measures, which asked respondents to place themselves on an 11-point scale where 0 = liberal and 10 = conservative. This item was recoded with 0 at the midpoint. The absolute value was then taken as the final measure ($M = 2.05$, $SD = 1.80$). Finally, *strength*

of *partisanship* was constructed using two survey items. The first asked which party respondents identified with (Green, Democratic, Republican, Libertarian), and the second asked how strong that identification is (1 = “not that strong” and 2 = “strong”). Respondents who did not identify with a party received a score of 0 on the final variable, while the strength of partisanship score was taken for those who did identify with a party ($M = 1.27$, $SD = .75$), resulting in a 3-point scale where 0 = non-identifier, 1 = weak identifier, and 2 = strong identifier.

Demographic Controls. Analyses also controlled for gender (1 = female), age, education (0 = “none” and 7 = “postgraduate degree”), and annual household income (0 = less than \$15,000 and 6 = \$150,000 or more). See earlier discussion for descriptive statistics.

Analysis

To analyze where social media users perceive more political disagreement, a repeated-measures analysis was conducted with both the name generator items (which has two categories within individuals: social media and face-to-face) and the general disagreement indicators (three categories: social media, face-to-face, anonymous online) using a hierarchical linear modeling (HLM) technique that treats individual respondents as a second-level variable with a random intercept while assessing mean levels of disagreement in each medium at the first level. These models assess differences within individual users across communication contexts while controlling for demographics (including age, gender, education, and income), political orientations that may affect the perception of disagreement (including political efficacy, political knowledge, political interest, strength of ideology, and strength of partisanship), and communication variables that are conceptually prior to social media use but possibly related to the perception of disagreement (including face-to-face political talk, e-mail political messaging, offline news use, and online news use). Finally, the models control for frequency of social media use itself. All control variables have been mean-centered, so that the model intercept is interpretable as the mean of political disagreement in the reference category (social media), adjusted at the mean of all other variables. The lone exception to this rule is the gender variable (1 = female), which was not mean-centered. Thus, results are reported among males (where female = 0; note that the coefficient is not statistically significant in either model, nor does female interact with other variables in the models).

To assess differences in perceived political disagreement between social media users and non-users, the nearest-neighbors matching technique was combined with ANCOVA-by-regression to estimate the “treatment” effect of social media use on political disagreement. A simple comparison of means between these two groups would introduce selection bias into the estimation process due to systematic differences between social media users and non-users; by constructing more comparable groups along key criteria, matching procedures have been shown to produce less biased estimates (Abadie, Diamond, & Hainmueller, 2015; Busso, DiNardo, & McCrary, 2014; Nielsen, 2014). First, propensity scores were constructed with a logistic regression (logit) model predicting social media use (1 = user, 0 = non-user) based on the demographic (age, gender, education, and income) and political orientation variables (political efficacy, political knowledge, political interest, strength of ideology, and strength of partisanship). Next, the nearest-neighbor method was used to randomly match non-users to each user. This procedure yielded improvement in balance in most matching variables.² Because there were more users than non-users, users were randomly selected for the matching procedure. Once the groups were constructed, the

“treatment” effect of social media use was estimated through an ANCOVA-by-regression (ordinary least squares [OLS]) procedure. These models control for communication variables that are conceptually prior to social media use but theoretically related to the perception of political disagreement, including face-to-face political talk, e-mail political messaging, offline news use, and online news use. These covariates were mean-centered to ease the interpretation of the intercept (the mean for the non-users group at the mean of the covariates). Means differences were also re-estimated using bootstrapping techniques (1,000 simulations).

To analyze the proposed mechanisms for exposure to disagreement on social media (social media news use, social media news network size, and social media news network diversity), OLS regression was used to assess the relationships between these variables and political disagreement on social media among the subgroup of social media users. These models control for the same demographics, political orientations, and communication variables as before. In addition, they control for disagreement in other communication settings (face-to-face and anonymous online) and political talk on social media. A final model was submitted to a threefold cross-validation comparing a “full” model to a “null” model, and mean squared prediction errors (MSPEs) are reported.

Results

The first set of hypotheses (H1[a] and H1[b]) posits that people would perceive more disagreement on social media than elsewhere, and repeated-measures analyses were conducted to test this prediction (see Table 1).³ Both models show significant differences in perceived disagreement across media. In the name generators model, the fixed intercept term for the name generators, which can be interpreted as the mean for social media, is 1.19 (SE = .12, $p < .05$). Meanwhile, the mean for face-to-face discussion is significantly lower at .80, as the coefficient shows the difference between face-to-face and social media settings ($B = -.39$, SE = .06, $p < .05$, see Figure 1). In the general indicators model (see Figure 1), the social media mean (that is, the fixed intercept term) is 1.94 (SE = .20, $p < .05$), which is significantly higher than the mean for face-to-face settings ($M = 1.59$, $B = -.35$, SE = .08, $p < .05$) and anonymous online settings ($M = 1.24$, $B = -.70$, SE = .08, $p < .05$). Taken together, these results provide strong support for H1(a) and H1(b), and indicate that social media users generally perceive more political disagreement on social media than they do elsewhere. The second hypothesis predicts that social media users will perceive more political disagreement than non-users, and a matched sample group mean comparison was used to test this prediction. The fixed intercept terms for these models (see Table 2) can be interpreted as the mean for the non-social-media users group, while the beta coefficients for the social media users group are mean differences from the non-users. In the names generators model, the mean for non-users is .87 (SE = .07, $p < .05$). Meanwhile, the mean for social media users is significantly higher at 1.26 ($B = .39$, SE = .10, $p < .05$). In the general indicators model, the mean for non-users is .81 (SE = .08, $p < .05$), and the mean for users is once again significantly higher at 1.62 ($B = .81$, SE = .11, $p < .05$).⁴ These results, which are illustrated in Figure 2, strongly support H2 and show that social media users perceive more political disagreement than non-users. The third set of hypotheses (H3[a, b, c]) predicts that one or more indicators of social media news use and/or news networks will be positively related to political disagreement on social media, and OLS regression was used to test this prediction. Results (see Table 3) show that social media news use is significantly and positively related to political disagreement on social media ($B = .03$, SE = .01, $p < .05$).^{5,6} These

Table 1
Estimated differences in political disagreement across communication contexts among social media users

Variable	Political Disagreement			
	Name Generators		General Indicators	
	B (Var.)	SE (SD)	B (Var.)	SE (SD)
Fixed Effects: Mean Differences				
Intercept (Social Media)	1.19*	.12	1.94*	.20
Medium (Face-to-Face)	-.39*	.06	-.35*	.08
Medium (Anonymous Online)	–	–	-.70*	.08
Fixed Effects: Covariates				
Age	.00	.00	-.01*	.00
Gender (1 = Female)	.04	.07	.00	.11
Education	.01	.02	.09*	.03
Income	.01	.02	.00	.03
Political Efficacy	-.05	.04	.08	.06
Political Knowledge	.00	.03	-.04	.05
Political Interest	.10*	.03	.17*	.05
Strength of Ideology	-.04*	.02	.00	.03
Strength of Partisanship	-.10*	.05	.15	.08
Face-to-Face Political Talk	.00	.00	.00*	.00
Email Political Messaging	.12*	.03	.43*	.05
Offline News Use	.00	.00	.01	.01
Online News Use	.00	.00	-.01	.01
Social Media Use	.02*	.00	.00	.01
Random Effects				
Intercept (Subject)	(.00)	(.04)	(.52)	(.72)
Residual	(.99)	(1.00)	(1.33)	(1.15)
Log Likelihood	-1552.2		-2074.5	

Notes. Cell entries are unstandardized beta coefficients (B), standard errors (SE), variances (Var.), and standard deviations (SD) estimated by maximum likelihood (ML) from a mixed effects linear model with a repeated-measures (within-subjects) design predicting political disagreement. The reference group for the medium variable is social media. Covariates are mean-centered. For name generators, $N = 575$, observations = 1097. For general indicators, $N = 435$, observations = 1225. * $p < .05$.

results support H3a and show that, on social media, news use and political disagreement are positively associated. However, H3b (social media news network size) and H3c (social media news network diversity) are rejected.

Conclusions and Discussion

All three hypotheses received some support. Social media users perceive more disagreement than non-users, and they perceive more of it on social media than elsewhere. Furthermore, news use on social media is positively related to perceived political disagreement on social media. Much of the prior survey research on social media and political disagreement assesses relationships between perceived political disagreement on

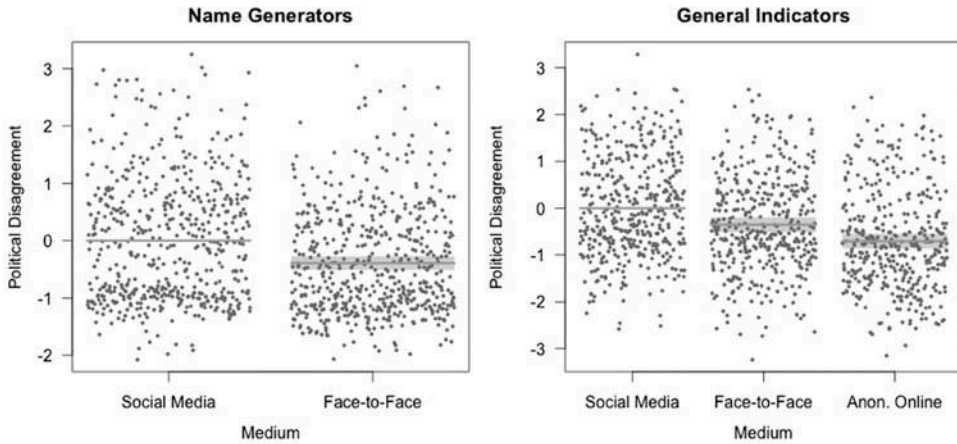


Figure 1. Mean differences in perceived political disagreement in various communication settings for the name generators (left) and general indicators (right) among social media users, as estimated from the model shown in Table 1.

Table 2

Estimated “treatment” effect of social media use on political disagreement (top) and estimated mean differences in political disagreement between social media users and non-users (bottom)

Variable	Political Disagreement			
	Name Generators		General Indicators	
	B	SE	B	SE
“Treatment”				
Intercept ($M_{Non-Users}$)	.87*	.07	.81*	.08
Social Media Use (1 = User)	.39*	.10	.81*	.11
Covariates				
Face-to-Face Political Talk	.00	.00	.01*	.00
Email Political Messaging	.00	.05	.41*	.06
Offline News Use	.01	.01	.00	.01
Online News Use	.00	.00	.01*	.01
R ²	.07		.41	
“Treatment” Group				
Social Media Users	M	SD	M	SD
	1.26	.07	1.62	.08
Non-Users	.87	.07	.81	.08

Notes. Cell entries (top) are unstandardized beta coefficients (B) and standard errors (SE) from ordinary least squares (OLS) regression analyses. Covariates are mean centered so that the intercept is interpretable as the mean of the non-users group, adjusted at the mean of the covariates. The coefficient for social media use is interpretable as the difference from the intercept, adjusted at the mean of the covariates. N = 288. *p < .05. Cell entries (bottom) are bootstrapped adjusted means (M) and standard deviations (SD) (simulations = 1,000) derived from the same model formula.

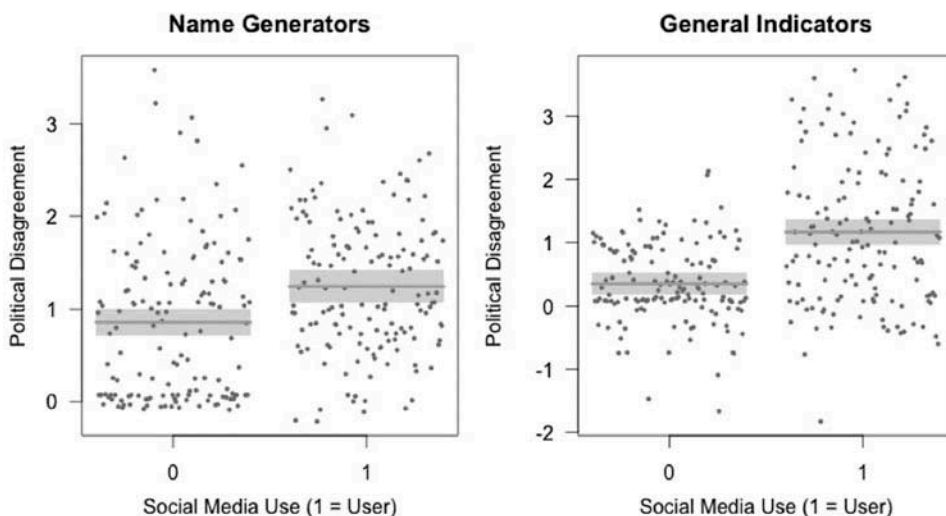


Figure 2. Mean differences in perceived political disagreement between social media users and non-users for the name generators (left) and general indicators (right), as estimated from the model shown in Table 2.

social media and generic social media use or informational/political uses of social media (e.g., Barnidge, 2015; Kim, 2011; Kim et al., 2013; Lee et al., 2014). Meanwhile, prior research using Web data shows evidence of exposure to politically incongruent messages on Facebook (Bakshy et al., 2015) or Twitter (Barberá, 2014). These prior findings establish that political disagreement occurs on social media, and that it is associated with frequency of use and/or news use. But none of this evidence satisfactorily answers the following question: Do social media perceive more political disagreement *than they would otherwise*? Nor does it answer this question: Do social media users perceive more political disagreement on social media *than in other settings*?

The current study provides a first step toward answering these questions. Evidence from between-groups and within-subjects comparisons provides powerful leverage over the problem of social media and political disagreement. The design of the current study is therefore a major strength, as it enables the kinds of basic comparisons that, in this case, support central claims about social media and its abilities to promote political disagreement (e.g., Brundidge, 2010). The findings also provide additional evidence that news use may potentially act as a mechanism for the perception of political disagreement on social media. Social media use is associated with having more diverse social and information networks (Bakshy et al., 2015; Barberá, 2014; Lee et al., 2014), and engaging with this relatively more diverse news content could potentially promote cognitive elaboration and reflection processes that may result in the perception of disagreement (Barnidge, 2015; Kim, 2011; Kim et al., 2013). Because this study cannot establish causality in this relationship, future research should focus on testing the effect of social media news use on perceived disagreement in a controlled experiment.

These conclusions have implications for ideas about informational filtration. While both the filter bubble argument (Pariser, 2011) and the user filtration argument (John & Dvir-Gvirsman, 2015; Malinen, 2015; Noel & Nyhan, 2011) suggest that social media should limit exposure to political disagreement, the present study implies a different conclusion: Social media users perceive more political disagreement despite algorithmic

Table 3

The relationships between news network/use variables and political disagreement on social media (general indicators)

Variable	Social Media Political Disagreement (General Indicators)	
	B (SE)	
Intercept	1.23	(.40)*
Age	-.01	(.00)*
Gender (1 = Female)	.09	(.15)
Education	.03	(.05)
Income	-.05	(.05)
Political Efficacy	-.06	(.09)
Political Knowledge	-.06	(.07)
Political Interest	.01	(.07)
Strength of Ideology	.01	(.04)
Strength of Partisanship	.12	(.10)
Face-to-Face Political Talk	.00	(.00)
Email Political Messaging	.01	(.08)
Offline News Use	.00	(.01)
Online News Use	.00	(.01)
Face-to-Face Political Disagreement	.33	(.05)*
Anonymous Online Political Disagreement	.42	(.05)*
Social Media Use	.00	(.01)
Social Media Political Messaging	.00	(.00)
Social Media News Use	.03	(.01)*
Social Media News Network Size	.00	(.00)
Social Media News Network Diversity	-.18	(.31)
R ²	.49	

Notes. Coefficients are unstandardized beta coefficients (B) with standard errors (SE) from ordinary least squares (OLS) regression model predicting political disagreement on social media. N = 349, *p < .05.

or user-based filtration. That is not to say that filtration is not an important aspect of social media use; to the contrary, one can only presume that without these filtering mechanisms, people would encounter even more disagreement than they already do. Therefore, both algorithmic and user filtration serve as important counterweights to the mechanisms that promote exposure to disagreement on social media.

This study also has implications for the idea that online media fragment public spheres along interest- and/or identity-based lines (e.g., Sunstein, 2007). According to these ideas, people no longer come together in public spaces to discuss common issues; rather, they express their opinions online to people who are predisposed to agree with them. From a broader view, these trends represent only part of a larger shift in social structure. Place-based and lifestyle segmentation (e.g., Bishop, 2007) drives individuals to cities and neighborhoods filled with people who are similar to themselves socioeconomically and politically. These elements—place, socioeconomics, and political identity—are

increasingly associated with one another (Bennett, 1998; Walsh, 2012). Meanwhile, several mainstream media channels in the United States have become more partisan and polarized (e.g., Stroud, 2011), and selective exposure to these media deprives people of politically diverse views in the media, which used to be a primary source of cross-cutting exposure (Mutz & Martin, 2001). In short, people perceive less and less disagreement in their everyday lives—both in face-to-face contexts and from the media.

But the present study provides an important counterpoint to these ideas. Social media users perceive more political difference than non-users, and they perceive that difference on social media more than they do elsewhere. This conclusion implies that communication within the egocentric networks of social media users is relatively more diversified, rather than more normalized, than communication among non-users. The question, then, is not whether social media contribute to the fragmentation of the public sphere, but whether they are important enough to counteract fragmentation online, in face-to-face settings, and in the media.

The conclusions just outlined are limited in several important ways. The first set of issues is related to the measurement of disagreement. First, the article relies on self-reported measures of media consumption and perceived political disagreement, and these kinds of measures are susceptible to bias. Closed-ended items (such as the ones used for news exposure and the general indicators of disagreement) are known to promote overreporting, while open-ended items typically promote underreporting. While this study has used both measurement strategies to gain additional leverage over the research problem, future research would ideally track individuals' actual consumption of social media content in order to triangulate observations for more powerful estimation of exposure to political disagreement. A closely related second issue is the conceptual and empirical slippage between the name generators and the general indicators of political disagreement, which exhibit distinct patterns of association with antecedent and outcome variables. Future research could approach this issue in a systematic manner (see, e.g., Klofstad, Sokhey, & McClurg, 2013). Third, discussion frequency was not measured in the name generators portion of the survey, and therefore the study cannot distinguish between disagreement that does or does not arise from discussion on social media. Fourth, the study provides no direct evidence that cognitive elaboration and reflection mediate the process of perceiving disagreement. Future research should focus on testing this theoretical process directly. Fifth, the study does not measure political disagreement separately on Facebook and Twitter. Future research should investigate the differences between these prominent social media platforms, which could be important as patterns of use continue to shift and change. Future research could also focus on the differences between conservatives and liberals, as prior research has shown that conservatives are less likely to be exposed to disagreement on social media. However, prior research has not shown whether this is due to social media, specifically.⁷ Finally, while this study has focused on the perception of disagreement, future research could assess discrepancies between those perceptions and reality, as judged by an external observer (see Dvir-Gvirsman, Tsfati, & Menchen-Trevino, 2014; Wojcieszak & Price, 2012a, 2012b).

While the hypotheses regarding social media news network size and diversity are theoretically grounded, these predictions were not borne out in the analysis. It is possible that there is no relationship between them and perceived political disagreement on social media; however, this non-finding could also be due to increased measurement error introduced by the computation involved in variable construction. Alternatively, it is also

possible that the influences of network size and diversity are canceled out by news use, which may be endogenous to political disagreement. It could be that individuals who are motivated to “hear the other side,” which ostensibly arises from prior encounters with the diverse others, consume news in order to do so. More research is needed to untangle these issues regarding the relationship between political disagreement and news use, as well as the roles played by news networks. In addition, more research is needed to directly test the social-psychological explanations for why cognitive elaboration and reflection results in the perception of disagreement, including social judgment and social identity theories.

Results from the matching procedure should also be interpreted with caution. While matching procedures have been shown to reduce selection bias in mean comparisons of non-randomly assigned groups (Abadie et al., 2015; Busso et al., 2014; Nielsen, 2014), they cannot account for unobserved differences between treated and untreated subjects (Arceneaux, Gerber, & Green, 2006). Another limitation stems from the use of an opt-in Internet panel. Strictly speaking, opt-in samples are not probability samples, which means they may not be representative of the target population. However, the sample is comparable to that population in terms of demographics and, most importantly, social media use. In addition, online samples produce model estimates comparable to those based on probability samples when the purpose of the study is to explain theoretical relationships (Baker et al., 2013; Eckman, 2016). Finally, these data are cross-sectional, and therefore cannot be used to make causal inferences.

Despite these limitations, this study provides empirical support for theoretical claims about social media and political disagreement. It shows that social media users perceive more political disagreement than non-users, and that they perceive more of it on social media than in other communicative settings. Finally, social media news use may have something to do with why social media users perceive disagreement.

Acknowledgments

The author would like to acknowledge Hernando Rojas, Professor in the School of Journalism and Mass Communication at the University of Wisconsin-Madison, for his role in developing this research.

Funding

This research was funded, in part, by the Wisconsin Alumni Research Foundation and the School of Journalism and Mass Communication at the University of Wisconsin-Madison.

Supplemental Material

Supplemental data for this article can be accessed on the publisher’s website at <http://dx.doi.org/10.1080/10584609.2016.1235639>.

Notes

1. This study was approved by the University of Wisconsin-Madison’s Education and Social/Behavioral Sciences Institutional Review Board on March 25, 2015 (Submission ID: 2015-0118).
2. The following logit coefficient estimates (with standard errors in parentheses) predicting social media use (1 = social media user) were used as propensity scores: $P_{\text{social media use}} = 1 / 1 + e^{-}$

(2.42(.44))—0.04(.01)_{age} + .56(.20)_{female}—0.08(.07)_{education}—0.03(.07)_{income}—0.04(.13)_{political efficacy} + .00(.10)_{political knowledge} + .10(.10)_{political interest}—0.04(.06)_{strength of ideology} + .24(.15)_{strength of partisanship}. McFadden pseudo $R^2 = .07$, Nagelkerke $R^2 = .11$, $N = 615$. Percent improvement for propensity score variables are as follows: distance = 20.00, age = 21.80, gender = 11.02, income = 53.49, education = 11.52, political efficacy = -105.15, political interest = 14.03, political knowledge = 26.18, strength of ideology = 68.75, strength of partisanship = -24.69.

3. Both models show relatively low levels of variation within subjects as compared to residual variance. For the name generators, the within-subjects variance is .00 (versus residual variance of .99); for the general indicators, the within-subjects variance is .52 (versus residual variance of 1.33). These figures yield relatively low intra-class correlation coefficients (ICC = .00, for the name generators; ICC = .28, for the general indicators).
4. These models were re-estimated using bootstrapping techniques (1,000 simulations) and produced substantively similar results (see Table 2).
5. Because of the relatively high R^2 statistic (.49), models were also estimated without interpersonal and anonymous online disagreement (both of which were strongly related to social media disagreement). When either is removed, explained variance decreases while the coefficients change little.
6. This OLS regression model was subjected to a threefold cross-validation, and results show that the full model—the model including the social media news use variable (mean squared prediction error [MSPE] = 172.26)—performed better than the null model—the model without the variable (MSPE = 198.34).
7. Tests were conducted to determine whether there are significant differences between conservatives and liberals. In the repeated measures analysis for the general indicators of political disagreement, the difference between political disagreement in social media and anonymous online settings is greater for liberals than it is for conservatives ($B = .06$, $SE = .031$, $p < .05$). Thus, there is some tentative evidence that conservatives encounter more disagreement in anonymous online settings than liberals. However, this result is not mirrored in the name generators model or in the matching analysis. Finally, political ideology does not interact with any of the three social media news indicators in the OLS analysis.

References

- Abadie, A., Diamond, A., & Hainmueller, J. (2015). Comparative politics and the synthetic control method. *American Journal of Political Science*, 59(2), 495–510. doi:10.1111/ajps.12116
- Adar, E., & Adamic, L. A. (2005). Tracking information epidemics in blogspace. In *2005 IEEE/WIC/ACM international conference on web intelligence*, pp. 207–214. Washington DC: IEEE Computer Society. Retrieved from <http://dl.acm.org/citation.cfm?id=1092473>
- Arceneaux, K., Gerber, A. S., & Green, D. P. (2006). Comparing experimental and matching methods using a large-scale voter mobilization experiment. *Political Analysis*, 14(1), 37–62. doi:10.1093/pan/mpj001
- Baker, R., Brick, J. M., Bates, N. A., Battaglia, M., Couper, M. P., Dever, J. A.,...Tourangeau, R. (2013). Summary report of the AAPOR task force on non-probability sampling. *Journal of Survey Statistics and Methodology*, 1, 90–143. doi:10.1093/jssam/smt008
- Bakshy, E., Karrar, B., & Adamic, L. (2009). Social influence and the diffusion of user-created content. In *Proceedings of the tenth ACM conference on electronic commerce*, pp. 325–334. New York: ACM. Retrieved from <http://dl.acm.org/citation.cfm?id=1566421>
- Bakshy, E., Messing, S., & Adamic, L. (2015). Exposure to ideologically diverse news and opinion on Facebook. *Science*, 348, 1130–1132. doi:10.1126/science.aaa1160
- Bakshy, E., Rosenn, I., Marlow, C., & Adamic, L. (2012). The role of social networks in information diffusion. *Proceedings of the 21st international conference on World Wide Web*, pp. 519–528. New York: ACM. Retrieved from <http://dl.acm.org/citation.cfm?id=2187907>

- Barberá, P. (2014). *How social media reduces mass political polarization: Evidence from Germany, Spain, and the United States*. Working Paper. Retrieved from <http://pablobarbera.com/static/barbera-polarization-social-media.pdf>
- Barnidge, M. (2015). The role of news in promoting political disagreement on social media. *Computers in Human Behavior*, 52, 211–218. doi:10.1016/j.chb.2015.06.011
- Bennett, W. L. (1998). The uncivic culture: Communication, identity, and the rise of lifestyle politics. *PS: Political Science & Politics*, 31(4), 741–761. doi:10.1017/S1049096500053270
- Bishop, B. (2007). *The big sort: Why the clustering of like-minded America is tearing us apart*. New York, NY: Houghton Mifflin Harcourt.
- boyd, d. m., & Ellison, N. B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication*, 13(1), 210–230. doi:10.1111/j.10836101.2007.00393.x
- Brundidge, J. (2010). Encountering “difference” in the contemporary public sphere: The contribution of the Internet to the heterogeneity of political discussion networks. *Journal of Communication*, 60(4), 680–700. doi:10.1111/j.14602466.2010.0150-9.x
- Busso, M., DiNardo, J., & McCrary, J. (2014). New evidence on the finite sample properties of propensity score reweighting and matching estimators. *The Review of Economics and Statistics*, 96(5), 885–897. doi:10.1162/REST_a_00431
- Cha, M., Mislove, A., & Gummadi, K. P. (2009). A measurement-driven analysis of information propagation in the Flickr social network. In *Proceedings of the 18th international conference on World Wide Web*, pp. 721–730. New York: ACM. Retrieved from <http://dl.acm.org/citation.cfm?id=1526806>
- Cho, J., Shah, D. V., McLeod, J. M., McLeod, D. M., Scholl, R. M., & Gotlieb, M. R. (2009). Campaigns, reflection, and deliberation: Advancing an O-S-R-O-R model of communication effects. *Communication Theory*, 19(1), 66–88. doi:10.1111/j.1468-2885.2008.01333.x
- Conover, P. J., Searing, D. D., & Crewe, I. M. (2002). The deliberative potential of political discussion. *British Journal of Political Science*, 32(1), 21–62. doi:10.1017/S0007123402000029
- Davis, R. (1998). *The Web of politics: The Internet's impact on the American political system*. New York, NY: Oxford University Press.
- Duggan, M., Ellison, N. B., Lampe, C., Lenhart, A., & Madden, M. (2015). *Social media update 2014*. Report for the Pew Research Center: Internet, Science, and Tech division. Retrieved from <http://www.pewinternet.org/2015/01/09/social-media-update-2014/>
- Dvir-Gvirzman, S., Tsfati, Y., & Menchen-Trevino, E. (2014). The extent and nature of ideological selective exposure online: Combining survey responses with actual Web log data from the 2013 Israeli elections. *New Media & Society*, 18(5), 857–877. doi:10.1177/1461444814549041
- Eckman, S. (2016). Does the inclusion of non-Internet households in a Web panel reduce coverage bias? *Social Science Computer Review*, 34(1), 41–58. doi:10.1177/0894439315572985
- Eliasoph, N. (1998). *Avoiding politics: How Americans produce apathy in everyday life*. New York: Cambridge University Press.
- Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook “friends”: Social capital and college students’ use of online social network sites. *Journal of Computer-Mediated Communication*, 12(4), 1143–1168. doi:10.1111/j.1083-6101.2007.00367.x
- Eveland, W. P., Jr., Hutchens, M. J., & Shen, F. (2009). Exposure, attention, or “use” of news? Assessing aspects of the reliability and validity of a central concept in political communication research. *Communication Methods and Measures*, 3(4), 223–244. doi:10.1080/19312450903378925
- Gaines, B. J., & Mondak, J. J. (2009). Typing together? Clustering of ideological types in online social networks. *Journal of Information Technology & Politics*, 6(3–4), 216–231. doi:10.1080/19331680903031531
- Gil de Zúñiga, H., Jung, N., & Valenzuela, S. (2012). Social media use for news and individuals’ social capital, civic engagement, and political participation. *Journal of Computer-Mediated Communication*, 17(3), 319–336. doi:10.1111/j.1083-6101.2012.01574.x

- Grannovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology*, 78(6), 1360–1380. doi:10.1086/225469
- Hampton, K., Raine, L., Lu, W., Dwyer, M., Shin, I., & Purcell, K. (2014). *Social media and the "spiral of silence."* Report for the Pew Research Internet Project. Retrieved from www.pewinternet.org
- Hill, K. A., & Hughes, J. E. (1998). *Cyberpolitics: Citizen activism in the age of the Internet (people, passions, and power)*. Blue Ridge Summit, PA: Rowman & Littlefield.
- Huckfeldt, R., Johnson, P. E., & Sprague, J. (2004). *Political disagreement: The survival of diverse opinions within communication networks*. New York, NY: Cambridge University Press.
- Huckfeldt, R. R., & Sprague, J. (1995). *Citizens, politics and social communication: Information and influence in an election campaign*. New York, NY: Cambridge University Press.
- John, N. A., & Dvir-Gvirsman, S. (2015). "I don't like you anymore": Facebook unfriending by Israelis during the Israel–Gaza conflict of 2014. *Journal of Communication*, 65(6), 953–974. doi:10.1111/jcom.12188
- Kim, Y. (2011). The contribution of social network sites to exposure to political difference: The relationships among SNSs, online political messaging, and exposure to cross-cutting perspectives. *Computers in Human Behavior*, 27(2), 971–977. doi:10.1016/j.chb.2010.12.001
- Kim, Y., Hsu, S.-H., & Gil de Zúñiga, H. (2013). Influence of social media use on discussion network heterogeneity and civic engagement: The moderating role of personality traits. *Journal of Communication*, 63(3), 498–516. doi:10.1111/jcom.12034
- Klofstad, C. A., Sokhey, E., & McClurg, S. D. (2013). Disagreeing about disagreement: How conflict in social networks affects political behavior. *American Journal of Political Science*, 57(1), 120–134. doi:10.1111/j.1540-5907.2012.00620.x
- Kwon, K. H., Stefanone, M. A., & Barnett, G. A. (2014). Social network influence on online behavioral choices: Exploring group formation on social network sites. *American Behavioral Scientist*, 58(10), 1345–1360. doi:10.1177/0002764214527092
- Lee, J. K., Choi, J., Kim, C., & Kim, Y. (2014). Social media, network heterogeneity, and opinion polarization. *Journal of Communication*, 64(4), 702–722. doi:10.1111/jcom.12077
- Loader, B. D., & Mercea, D. (2011). Networking democracy? Social media innovations and participatory politics. *Information, Communication & Society*, 14(6), 757–769. doi:10.1080/1369118X.2011.592648
- MacKuen, M. (1990). Speaking of politics: Individual conversational choice, public opinion, and the prospects for deliberative democracy. In J. Ferejhon & J. Kuklinski (Eds.), *Information and democratic processes* (pp. 55–99). Urbana, IL: University of Illinois Press.
- Malinen, S. (2015). "Unsociability" as boundary regulation on social network sites. *Proceedings of the Twenty-Third European Conference on Information Systems (ECIS)*, Paper 128. Retrieved from http://aisel.aisnet.org/ecis2015_cr/128
- Messing, S., & Westwood, S. J. (2014). Selective exposure in the age of social media: Endorsements trump partisan source affiliation when selecting news online. *Communication Research*, 41(8), 1042–1063. doi:10.1177/0093650212466406
- Mitchell, A., Gottfried, J., Kiley, J., & Matsa, K. E. (2014). *Political polarization and media habits*. Report for the Pew Research Internet Project. Retrieved from www.pewinternet.org
- Mutz, D. C. (2006). *Hearing the other side: Deliberative versus participatory democracy*. New York, NY: Cambridge University Press.
- Mutz, D. C., & Martin, P. S. (2001). Facilitating communication across lines of difference: The role of mass media. *American Political Science Review*, 45(1), 97–114.
- Nielsen, R. A. (2014). Case selection via matching. *Sociological Methods & Research*. Advance online publication. doi:10.1177/0049124114547054
- Noel, H., & Nyhan, B. (2011). The "unfriending" problem: The consequences of homophily in friendship retention for causal estimates of social influence. *Social Networks*, 33(3), 211–218. doi:10.1016/j.socnet.2011.05.003
- Noelle-Neumann, E. (1993). *The spiral of silence: Public opinion—Our social skin*. Chicago, IL: University of Chicago Press.

- Pariser, E. (2011). *The filter bubble: What the Internet is hiding from you*. New York: Penguin.
- Price, V., Cappella, J. N., & Nir, L. (2002). Does disagreement contribute to more deliberative opinion? *Political Communication*, 19(1), 95–112. doi:10.1080/105846002317246506
- Rojas, H. (2015). Egocentric publics and perceptions of the world around us. In H. Gil de Zúñiga (Ed.), *New technologies and civic engagement: New agendas in communication* (pp. 93–102). New York, NY: Routledge.
- Schulz, A., & Roessler, P. (2012). The spiral of silence and the Internet: Selection of online content and the perception of the public opinion climate in computer-mediated communication environments. *International Journal of Public Opinion Research*, 24(3), 346–367. doi:10.1093/ijpor/eds022
- Shah, D. V., Cho, J., Nah, S., Gotlieb, M. R., Hwang, H., Lee, N.-J.,... McLeod, D. M. (2007). Campaign ads, online messaging, and participation: Extending the communication mediation model. *Journal of Communication*, 57(4), 676–703. doi:10.1111/j.1460-2466.2007.00363.x
- Sherif, M., & Hovland, C. I. (1961). *Social judgment: Assimilation and contrast effects in communication and attitude change*. New Haven, CT: Yale University Press.
- Stroud, N. J. (2011). *Niche news: The politics of news choice*. New York, NY: Oxford University Press.
- Sunstein, C. R. (2007). *Republic.com 2.0*. Princeton, NJ: Princeton University Press.
- Tajfel, H. (1982). Social psychology of intergroup relations. *Annual Review of Psychology*, 33, 1–39. doi:10.1146/annurev.ps.33.020182.000245
- Valenzuela, S., Arriagada, A., & Scherman, A. (2012). The social media basis of youth protest behavior: The case of Chile. *Journal of Communication*, 62(2), 299–314. doi:10.1111/j.1460-2466.2012.01635.x
- Walsh, K. C. (2004). *Talking about politics: Informal groups and social identity in American life*. Chicago, IL: University of Chicago Press.
- Walsh, K. C. (2012). Putting inequality in its place: Rural consciousness and the power of perspective. *American Political Science Review*, 106(3), 517–532. doi:10.1017/S0003055412000305
- Wellman, B., & Gulia, M. (1999). Net surfers don't ride alone: Virtual communities as communities. In M. A. Smith & P. Kollock (Eds.), *Communities and cyberspace* (pp. 167–194). New York, NY: Routledge.
- Wojcieszak, M. E., & Mutz, D. C. (2009). Online groups and political discourse: Do online discussion spaces facilitate exposure to political disagreement? *Journal of Communication*, 59(1), 40–56. doi:10.1111/j.1460-2466.2008.01403.x
- Wojcieszak, M., & Price, V. (2012a). Facts versus perceptions: Who reports disagreement during deliberation and are the reports accurate? *Political Communication*, 29(3), 299–318. doi:10.1080/10584609.2012.694984
- Wojcieszak, M. E., & Price, V. (2012b). Perceived versus actual disagreement: Which influences deliberative experiences? *Journal of Communication*, 62(3), 418–436. doi:10.1111/j.1460-2466.2012.01645.x