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"Go, Vote, and Tweet It": Interactivity in Online Protest-Related Discussions About the 2014 Catalan Referendum for Independence

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While studies abound that examine protest-related citizen communicative behaviors taking place online, there is still a limited understanding of the factors associated with social media users' engagement in 2-way interactive exchanges about the issue of protest. Using discussion threads as the unit of analysis, this study looks at potential predictors associated with users' engagement in interactive discussions in the context of the 2014 Catalan Referendum of Independence. Results show low overall levels of interactivity in discussions, with user status, media content sharing, negative emotion, and linguistic and ideological heterogeneity being related to lower interactivity levels. Findings are discussed within the framework of collective expressive modes of online citizen participation.

Keywords: political discussion, Twitter, social movements, interactivity, expressive participation

As social media seem to play an increasingly important role in social movements, much scholarly work has paid attention to how these platforms facilitate functions as instrumental for collective organizing as sharing information or calling for mobilization. But in times of social unrest, digital open platforms such as Twitter also serve as spaces for public discussion, and political conversation, despite being one of the most common uses in contexts of protest (Theocharis, Lowe, Van Deth, & García-Albacete, 2015), remains understudied. Prior studies reveal that complex, large-scale thematic conversations take place around protest issues on Twitter (e.g., Balcells & Padró-Solanet, 2020; Ogan & Varol, 2017; Theocharis et al., 2015), yet it remains less clear whether interpersonal, dialogical exchanges commonly take place in citizen-to-citizen interaction over protest issues in the digital realm.

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As protests unfold in the streets, social media may serve important mobilizing functions that may not require two-way interactive exchanges. For instance, Twitter's architecture and dynamics have made it a suitable platform for a fast, large-scale diffusion of information during protests (e.g., González-Bailón, Borge-Holthoefer, & Moreno, 2013; González-Bailón & Wang, 2016). Other practices may entail some reciprocity, such as discussing reasons to protest with acquaintances in one's network. Thus, various communicative behaviors may coexist in ways that shape the structure of protest-related discussions on Twitter. Prior studies have investigated the structure of citizen political conversations on Twitter using hashtags as a single conversational space (e.g., Burgess & Bruns, 2012; D'heer & Verdegem, 2014; Ogan & Varol, 2017), which makes it hard to observe interactivity while attending to these different behaviors. Fewer studies have focused on analyzing discussion dynamics within discrete political threads (e.g., Tromble, 2018; Yarchi, Baden, & Kligler-Vilenchik, 2020), and therefore, this area of research remains generally underdeveloped (see Ziegele, Springer, Jost, & Wright, 2018).

Further, how different user and message characteristics may shape the structure of protest-related online discussions remains somewhat unknown. Some dynamics are relatively well established; such is the case of the asymmetrical, top-down pattern of communication governing the interactions between highly influential and ordinary profiles, which often displays little interactivity (Jungherr, 2016; Kwak, Lee, Park, & Moon, 2010), but in turn facilitates a rapid transmission of information (González-Bailón et al., 2013; Jost et al., 2018). Yet other factors could contribute to realize social media's potential for large-scale collective action in different ways: The expression of collective emotions (Jost et al., 2018) could serve purposes of self-expression and identity formation, while ideological homogeneity may be preferable for sustained dialogue among users when collective identities are politicized. Yet interpersonal networks of connections are likely to include ties with political viewpoints different to one's own, opening up the potential for cross-cutting discussion and movement access from outside sympathetic circles. Such access is ultimately also key for movements to achieve some degree of public acceptance.

Against this backdrop, the present study proposes an examination of protest-related discussions through the lens of interactivity to investigate what drives *interactive* dialogical exchanges or, on the contrary, *reactive*, many-to-one unidirectional comments among Twitter users supporting or opposing protest activity online. Our study is unique in that it specifically focuses on dialogical protest-related interactions. Theocharis and colleagues (2015) categorized the roles of Twitter in protests across Spain, Greece and the United States into (1) mobilization, (2) coordination, (3) information, and (4) conversation. They found that, consistent across different movements and countries, actual Twitter use was predominantly information diffusion and conversation, rather than mobilization and coordination. Yet the interpersonal political conversations taking place on Twitter during protests have received disproportionally little attention relative to information diffusion and other large-scale dynamics. This study moves beyond these well-studied roles of social media; it focuses on the genesis and dynamics of political conversations unfolding alongside protests, thus filling an important gap in the literature.

Self-Determination on Twitter: The Case of the Catalan Referendum for Independence

On November 9, 2014, 2.3 million Catalans voted to decide whether they wanted Catalonia to become a sovereign state, independent from Spain. The central Spanish government repeatedly denounced its lack of legitimacy after the Supreme Court unanimously suspended the referendum twice before November 9 and declared it illegal (Brunet, 2014). In response to its prohibition, the consultation soon became a cause for mass mobilization and a celebration of popular will and resilience for those who supported independence.

Social media platforms, particularly Twitter, became one of the main receptacles for public discussion around the unusual plebiscite; a space for popular grievance and affirmation of identity. It also became a forum for mobilization: In a display of mastery of the language and conventions of online social protest, calls for participation to vote on the Referendum inundated Twitter that day. A highly active group of independence supporters urged the Catalan population not only to contribute their vote to the consultation but also to spread the movement's message with explicit intentions of becoming worldwide *trending topic.* An article published in the Spanish newspaper *El Mundo* describes this campaign strategy and wittily summarizes its motto in its title "Id, votad y tuiteadlo" ("Go, Vote, and Tweet It"; Saiz, 2014).

Twitter discussions around the Catalan referendum provide an appropriate empirical setting to analyze informal political discussions for several reasons: First, although not a new phenomenon, the Catalan case has gained presence both in global mass media coverage as well as new media (e.g., Saeed, 2017), increasing citizen engagement. Moreover, referendums are critical events which attract exceptional levels of political activity (Child, 2017; Llewellyn & Cram, 2016). For the Catalan case, the pro-independence side has actively used digital networked tools to organize citizen mobilization (Crameri, 2015).

Our study examines how social influence, sharing media and news contents, negative sentiment, and cross-cutting perspectives influence interactivity in Twitter protest-related threads. It analyzes 17,952 threads occurring around November 9, 2014, the day of the referendum for independence in the northeastern region of Catalonia, in Spain. In the following, we examine how informal discussion dynamics and two-way, interactive exchanges are shaped by various user and message characteristics.

Protest-Related Online Discussions

Theoretical debates about the nature of citizen political talk have long considered how online environments pose a challenge to traditional conceptualizations of political discussion, mainly because the type of discussions occurring online may bear little resemblance to the deliberative ideal. Deliberative theory generally describes political talk as a rational, rule-bound, structured debate, motivated by political goals (Eveland, Morey, & Hutchens, 2011). Yet online conversations are often dominated by a few individuals and rarely exhibit cross-cutting exposure (Freelon, 2015; Toepfl & Piwoni, 2015). Such circumstance calls into question whether online discussions should be at all expected to follow rules of turn-taking and reciprocity, or if deliberation should at all be a necessary expectation for researchers to set when studying everyday political talk (Conover & Miller, 2018; Eveland et al., 2011; Mutz, 2006).

Alternative understandings of online citizen political talk exist which have moved away from a deliberative ideal to recognize the participatory value of the kind of political interactions that takes place on digital platforms. Gibson and Cantijoch (2013) situate online discussion into a broader category of expressive participation, together with posting and forwarding practices, among others. Others had previously conceptualized political talk as symbolic act, akin to yard signs (Endersby & Towle, 1996), or had empirically identified an "expressive" mode of online participation centered around the public expression of political orientations rather than conversation (Rojas & Puig-i-Abril, 2009). Expressive, or "sharing" modes of participation may represent a rather spontaneous and irregular form of political engagement (Gibson & Cantijoch, 2013), but nevertheless a common one in times of increasing individualization in postindustrial democracies (Putnam, 2000). Importantly for social movements, digital networked technologies enable the expression and sharing of personalized political action: "In this interactive process of personalization and sharing, communication networks may become scaled up and stabilized through the digital technologies people use to share ideas and relationships with others. . . .The communication processes themselves represented important forms of organization" (Bennett & Segerberg, 2012, p. 746). Thus, in collective action movements, posting and replying could either represent a form of collective *expression* or *discussion*.

Empirically, one plausible way of distinguishing between expression and discussion is interactivity: the extent to which users engage in two-way dialogical exchanges. Interactivity is a meaningful way of assessing user engagement, as an original message may generate comments from numerous others who *react* yet do not *interact* with each other at all. To date, the most common practice in the study of Twitter discussions has been to use hashtags as the conversational space, then build a single, large-scale discussion structure employing user mentions (@mention) to measure the degree of interactivity among users at the macro level (e.g., Burgess & Bruns, 2012; D'heer & Verdegem, 2014; Ogan & Varol, 2017). In contrast, studies examining discrete political Twitter threads, which include individual messages beyond the protest hashtag and are built based on conversational turns (@reply), are relatively scarce (e.g., Tromble, 2018; Yarchi et al., 2020). Yet a focus on interactivity within discrete threads is much advantageous to examine protest-related communicative behaviors from a conversational standpoint. Recent critiques underscore the underdevelopment of research on discussion structures and dynamics in terms of thread analyses (Ziegele et al., 2018).

Here, we determine interactivity at two levels: initiator and discussants. An *initiator* is the individual starting a thread and *discussants* are all those who participate in the thread after the initiator. Using a dinner party as an analogy, initiator interactivity measures the degree to which the party host (initiator) interacts with the guests (discussants), while discussant interactivity focuses on how much the guests (discussants) are conversing with one another. We distinguish between initiator and discussant interactivity as we expect them to relate differently to various initiator and message-level factors within the logic of online protest communicative dynamics. First, on Twitter, users may react to a tweet as they react to various online contents, such as news stories or YouTube videos. These reactive comments are what Ksiazek, Peer, and Lessard (2016) recognize as user-content interactivity, and they may be influenced by the status of an initiator or by various content features (e.g., sharing a link). We assume that the initiator's position is unique within a thread as she is the person initiating it and thus becomes the recipient of the bulk of replies, independent of her motivation to reciprocate. This assumption is also derived from the logic of connective action (Bennett & Segerberg, 2012), whereby individualized, self-expressive communication needs are plausible drivers of posting behavior, yet they may not entail subsequent interactions. Second, the architecture of threads enables the emergence of

multiple spheres of interactive exchanges embedded within a thread, as participants can direct public replies (@reply) to the initiator, but also to any other user, with or without the initiator's further involvement. We assume that a discussant replying directly to another discussant implies an explicit appeal to an interlocutor. This type of user–user interactivity (Ksiazek et al., 2016) is often motivated by social interaction and socialization needs. Still, an important consideration is that the conversational space (i.e., the thread) is made possible by the initiator, and as such she represents a privileged interlocutor. Ultimately, these two levels of interactivity should be considered separately, as there are different motivations and constraints to interactivity for initiators and discussants. The following sections will consider potential correlates of discussion development, which may affect interactivity at either of these levels.

Social Influence in Online Mobilizations

Social network sites possess the distinct feature of articulating a visible network of interpersonal connections (boyd & Ellison, 2007). This incorporates complex dynamics of social influence that may fundamentally shape the general structure of online discussions (Kwak et al., 2010; Wu, Hofman, Mason, & Watts, 2011). Such premise is also at the core of a sustained theoretical debate around whether the communicative dynamics of online protests as collective action are centralized.

Networked communication technologies possess unique structural affordances enabling grassroots actors and citizens to bypass traditional mediators, and to potentially overcome the need for formal leadership (Castells, 2012). Such circumstances enabled a radical transformation in the dynamics of collective action (Bennett & Segerberg, 2012). Nonetheless, the notion that these movements are "leaderless" has been challenged in studies exploring actual communication dynamics in addition to network structures (Gerbaudo, 2012; González-Bailón & Wang, 2016), suggesting that online mobilizations may exhibit strong *hierarchies of attention* (Gerbaudo, 2012). In an era where SNSs have become primary sources of information (Newman, Fletcher, Schulz, Andi, & Nielsen, 2020), official profiles of media, politicians, and other traditional elites often receive attention from the ordinary user. These profiles play key roles in the spread of information and growth of online protests (González-Bailón et al., 2013). Hence, they are more likely to be addressed than other profiles whenever they send out messages of interest.

As social influence dynamics unfold over time, they may also set the rules for two-way, dialogical exchanges. On Twitter, the blurring of boundaries between mass and interpersonal communication is signified by the coexistence of traditional mass-media-like profiles, users who primarily interact with others, and those exhibiting hybrid, masspersonal dynamics (Wu et al., 2011). We argue that highly influential profiles tend to represent the former type and, while they are key in maintaining movement momentum, they play a minor role in promoting interpersonal political discussions. For instance, elites communicate in a more traditional, one-to-many fashion than other core actors such as movement organizers (Melucci, 1996). These profiles often lack engagement in interpersonal exchanges partly because they represent a public, dedicated source of information rather than a channel for direct communication with their audiences. As such, threads initiated by popular profiles are likely to display reduced interactivity not only at the initiator level, but similarly also among discussants:

H1: Initiator status will be negatively associated to (a) initiator and (b) discussant interactivity within threads.

Sharing Movement-Related Contents

Social media have grown as sites for news use and consumption of political information (Newman et al., 2020). During protests, dissemination of demonstration visuals and news often coexist with personal expression of political opinions on SNSs (Tufekci & Wilson, 2012). Although users employ Twitter primarily for informational purposes (e.g., sharing news articles about the movement; Theocharis et al., 2015; Valenzuela, 2013), they may also share news and other contents to socialize (Holton, Baek, Coddington, & Yaschur, 2014; Lee & Ma, 2012). Linking additional contents in a tweet may also serve the more practical need of bypassing Twitter's character restrictions,[2] which likely provides messages with more depth and increases opportunities for conversation. Further, content-sharing practices may represent acts of expression in and of themselves: as movements strive for visibility, visuals play a key role in protest communication (see Neumayer & Rossi, 2018), offering great potential for user engagement. Importantly, the networking affordances of SNSs allow initiator and discussants to engage in interpersonal or small-group discussions around content in a more private fashion relative to news websites or open forums, which may stimulate engagement in two-way exchanges. However, as these are generalized practices on social media, it is safe to assume that not all contents will equally trigger discussion. Given that little is known about whether content sharing is followed by significant dialogical exchanges, a research question is proposed:

RQ1: Is the sharing of media or Web-based contents related to (a) initiator and (b) discussant interactivity?

Negative Emotion in Protest Communication

Social psychological theories of protest posit that a key process to citizen protest involvement and mobilization is the development and politization of a collective identity, meaning the identification with a given group whose identity becomes the focus of a power struggle (Simon & Klandermans, 2001). The politization of collective identities then unfolds as shared grievances are stated and a rival outgroup identified at which to direct adversarial attributions (e.g., blame; Klandermans, 2014). Accordingly, the engagement in social movements and protests often entails strong emotional involvement (Goodwin & Jasper, 2006). Specifically, self-determination movements are often charged with nationalistic sentiments that tend to polarize issue positions even when individuals' identification with the cause is otherwise rather weak (Guntermann, 2017).

Emotionally charged messages arguably promote users' engagement in discussion by provoking strong emotional reactions. According to functional theories of emotion (Frijda, 1988), this is the case especially for negatively valenced messages. Negative information captures the initial interest of message recipients more frequently than positive information (e.g., Pratto & John, 1991). Accordingly, the strong emotional reactions elicited by negative messages may produce greater subsequent user engagement (Chmiel et al., 2011).

[2] At the time of data collection, maximum was 140 characters.

While expressing negative sentiment may trigger more reactions, it may not necessarily lead to sustained dialogic exchanges. Conversation scholars propose that any speech act constrains the range of possible appropriate responses to it (Searle, Parret, & Verschueren, 1992). When citizens use social media for collective action, their communicative acts are mainly aimed at building mobilizing structures and framing the movement (Garrett, 2006). These efforts are often collective in nature, and, as such, delineate the range of behaviors enacted by citizens to a certain degree. Citizens may not contribute to discussions primarily to engage in two-way interactive exchanges with any particular individual or group, but rather to express their outrage or common grievances. If this is the case, then the expression of negative sentiment will not necessarily be accompanied by reciprocal exchanges among discussants—nor between them and the thread's initiator—but rather trigger a chain of reactions in a unilateral, many-to-one fashion. Given the scarcity of empirical evidence, we propose a research question:

RQ2: Is negative sentiment expressed in protest-related tweets related to (a) initiator and (b) discussant interactivity?

Homophily in Protest-Related Online Discussions

Finally, we consider one fundamental principle guiding human interaction, which is also at the core of debates about citizen political polarization: social homophily. Derived from this principle is the premise that interpersonal exchanges occur less often among individuals with different, as opposed to similar viewpoints because people tend to prefer interactions with like-minded others (Huckfeldt & Sprague, 1995). These dynamics are important drivers of content consumption and social interaction in high-choice media environments (Prior, 2007). On Twitter, most users follow and engage with individuals, groups, and information sources that are in accordance with their political beliefs (Barberá, Jost, Nagler, Tucker, & Bonneau, 2015; Yarchi et al., 2020). Furthermore, Twitter's specific discourse architecture has the potential to create conversational spaces that are particularly conducive to homogenous interactions—namely, the hashtag convention often denotes preferred issue framings that allow to contain discussions within group boundaries (Bruns & Burgess, 2011). In sum, as users tend to affiliate with like-minded others, networked architectures, and high media choice possibly reinforce selective discussion.

Specific political contexts can also contribute to magnifying distances among dissimilar viewpoints, and protests are likely one of them. Politicized collective identities imply "a cognitive restructuring of the social environment into opponents and (potential) allies" (Klandermans, 2014, p. 4). Given the identification with a certain subgroup in opposition to another, it is plausible that political protest displays rather polarized communication dynamics. This is especially the case when debates become heated and entail extreme positions (e.g., Balcells & Padró-Solanet, 2020, on Catalan independence; Evolvi, 2019, on anti- and pro-Muslim narratives after Brexit). Furthermore, some of the communicative practices that are specific to protest-related communication (e.g., calling for mobilization, sharing timely information) are to some degree endogenous to the supporting group because of the function they play in the context of protest discussions.

Thus, two-way interactive interpersonal exchanges should be more likely to occur among individuals holding similar positions toward the movement, both at the initiator and discussant levels. In the current case, pro-independence individuals will be more likely to engage in conversations with other

independentists, whereas citizens opposing the self-determination movement will tend to converse more with others holding the same views:

H2: *Linguistic and ideological heterogeneity in discussions will be negatively related to (a) initiator and (b) discussant interactivity.*

Method

Data

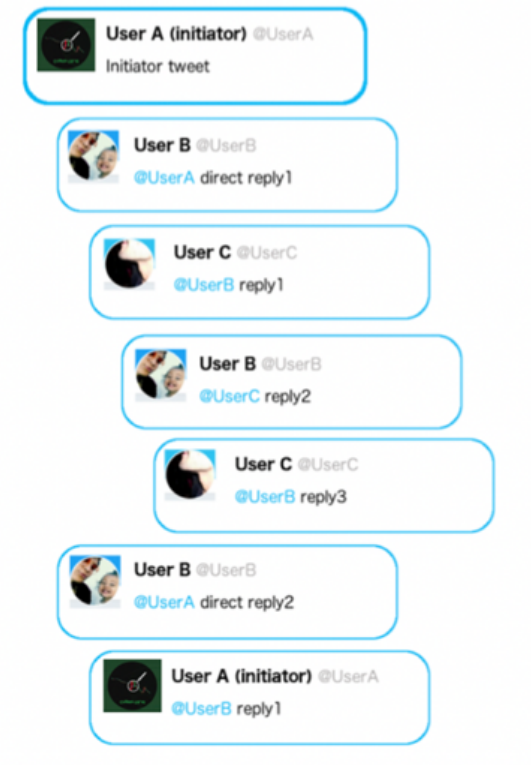
The conversations analyzed were collected from the three most popular Twitter hashtags—#9N, #9N2014, #cassolada—used to support, protest against, or report on the Catalan independence referendum and associated protests. Data collection followed three steps: First, tweets containing any one of the three hashtags were obtained for a one-month period centering around the referendum on November 9, 2014, from October 25 to November 25, 2014. Data were obtained through DiscoverText, an industry data provider which accesses Gnip Twitter data from the full firehose. From this data set (887,474 tweets), retweets (RT, 75.57%) were discarded whenever they were not part of a thread. Second, using the unique identifiers of the remaining tweets, complete conversation threads were obtained using an open-source script (Zubiaga, Liakata, Procter, Hoi, & Tolmie, 2016). The two-step approach allowed us to include tweets in protest-related threads that either did not contain any of the three hashtags or were outside of the 30-day time range. This second step yielded 373,064 tweets nested in 188,839 threads, of which the bulk were single tweets that had never gotten any replies (84%). The third and final step consisted in eliminating all those threads that would have yielded an interactivity of zero (one reply or less). The final sample included 17,952 conversation threads involving 45,913 unique users, written mainly in Catalan, Spanish, or English. This is a substantial number, yet we do not make any attempt to generalize this particular userbase to the wider population. Each thread in the sample included the tweet initiating the interaction and all possible direct and indirect (i.e., replying to a response) replies to it (see tree structure in Figure 1). Thread lengths ranged from three (initiating tweet plus two replies) to 605 replies. This sample was used to test H1, RQ1, and H2.

Content Analysis Sample

A random sample of 735 threads was drawn from the total data set for content analysis. To ensure a sufficient representation of different thread types, we randomly selected 245 threads length >1 where the initiator never replied and 245 threads of length >1 where the initiator replied at least once. The last third of the sample was selected without any constraints. The total number of tweets in this subsample was 4,153, involving 2,412 unique users. Based on this corpus of threads, content analysis[3] was conducted on (1) negative tweet sentiment (N = 1,772), indicating whether the overall emotional tone of the message was negative (Yardi & boyd, 2010), and (2) all user profiles regarding their position toward independence (pro, N = 1,319; moderate or unclear position; N = 495; and against, N = 598). We also categorized the function

[3] For detailed coding scheme, see Appendix A, here (https://mfr.de-1.osf.io/render?url=https://osf.io/kqf5z/?view_only=None%26direct%26mode=render%26action=download%26mode=render).

of initial tweets following Theocharis and associates (2015), about which we do not formally test hypotheses due to low frequencies, but present descriptive findings. Reliability was assessed having two independent tri-lingual coders each coding 10% of the sample. Once acceptable coding agreement was reached (Krippendorff's α = .71 negative emotion; α = .81 user position; α = .85 tweet function), the coders proceeded with the remaining sample. The subsample was used to test RQ2 and H2.



Initiator interactivity: .5
Discussant interactivity: .5

Figure 1. Illustration of nested tree structure of a generic Twitter thread and associated interactivity measures. Twitter threads are hierarchically organized: Replies can be in response to the original post (initiator) or to a previous reply (second-level reply).

Measures

Dependent Variables

Initiator interactivity measures the overall level of reciprocity displayed by the user initiating a thread. It is the ratio of complete conversation turns (A → B → A) involving the initiator out of the total number of turns within any given discussion thread. For example, in Figure 1, initiator interactivity would be 0.5, because there are two conversational turns involving User A, and A only reciprocates one. Similarly, *discussant interactivity* measures the overall level of reciprocity displayed by discussants interacting with each other (i.e., excluding

initiator). In Figure 1, discussant interactivity would also be 0.5, because 1 of 2 conversational turns involving Users B or C are complete. Both interactivity measures originally ranged from 0 to 1 (see Table 1).

Table 1. Sample Descriptive Statistics.

	Full sample +2 user responses (*N* = 17,952)			Content analysis sample +2 user responses (*N* = 333)		
	Mean or %	Median	*SD*	Mean or %	Median	*SD*
# replies	9.587	4	22.46	9.8	4	24.26
Account age (original, days)	1,412	1,400	596.68	1,417	1,386	564.11
Account age (log)	7.1	7.24	0.71	7.11	7.23	0.73
Followers count	117,422	4,326	584,553.2	65,542	2,753	293,602.1
Followers count (log)	8.69	8.37	2.4	8.26	7.92	2.22
Initiator interactivity ratio	0.16	0	0.2	0.23	0.25	0.2
User verified status	16.78%			11.71%		
Web-based content sharing	25.80%			21.62%		
Media content sharing	32.45%			36.34%		
Linguistic heterogeneity	65.70%			55.25%		
Ideological heterogeneity				55.55%		
Negative sentiment				36.03%		
	+3 user responses (*N* = 12,437)			+3 user responses (*N* =242)		
Discussant interactivity ratio	0.04	0	0.09	0.04	0	0.09

Independent Variables

User- and message-level measures were obtained from individual tweets' metadata. *User status* was operationalized as (1) a continuous variable representing user's follower count (log-transformed to correct for skewness), and (2) a binary variable indicating whether a user has a verified profile on Twitter. Verified status, represented by a blue checkmark, is bestowed to profiles of public interest and whose authenticity has been verified (Twitter, n.d.). At the message level, *Web-based content sharing* was operationalized as a binary variable indicating whether an initiating tweet included URLs, and *media content sharing*, also binary, indicated whether an initiating tweet included media contents such as pictures and videos. *Negative sentiment* was a binary variable indicating whether the emotional tone of the initiating tweet was negative, based on Yardi and boyd's (2010) operationalization.

Finally, *ideological and linguistic heterogeneity* were measured using the following two approaches, respectively: First, a direct and binary measure was obtained from the content analysis sample assessing users' Twitter profiles in terms of their position toward independence (e.g., pro-independence). From it, we computed a binary measure indicating whether discussions contained one (ideologically homogeneous) or more (heterogeneous) user positions. Second, a proxy variable based on language was available for the entire data set from Twitter's metadata. As the self-determination movement in this study engaged bilingual communities, ideological divisions are often voiced through the specific language with which each community identifies (e.g., Spanish vs. Catalan; Pavlenko & Blackledge, 2004). Thus, the presence of both Catalan and

Spanish user profiles in a discussion thread is arguably politically meaningful as it signals, to a certain degree, support or opposition of the independence movement. Figure 2 illustrates the correspondence between language and issue position variables. Linguistic heterogeneity was calculated for both the content analysis sample and the full sample.

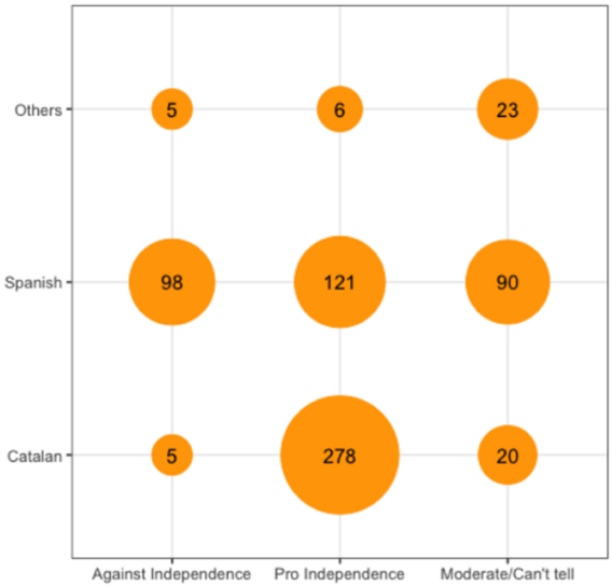


Figure 2. Correspondence between user issue position on independence and profile language from tweets' metadata.

Controls

Account age was operationalized as the number of days an account has been active at the time the tweet was posted. As all previous profile-based measures, it was calculated only for thread initiators. A logarithmic transformation corrected the right skew of the distribution.

Data Analysis

Data analysis was performed in RStudio (RStudio Team, 2020), using the package *pscl* (Zeileis, Kleiber, & Jackman, 2008). Zero-inflated negative binomial regression was used to model interactivity. Negative binomial models account for the overdispersed distribution of interactivity ratios, which we treated as pseudocontinuous count variables by multiplying them by 1,000. The zero-inflation portion accounted for the high number of cases where either initiator or discussants did not complete any conversational turn, thus yielding an interactivity of 0 (see Table 1). In addition, since threads with two replies or less, by definition, would have yielded a discussant interactivity of zero, only threads with more than three replies were included in the models predicting discussant interactivity. Finally, an interaction term between the user

status variables (i.e., follower count and verified status) accounted for moderate correlations (i.e., verified profiles are likely to have many followers).

Results

Descriptive Analyses

Overall, we observed very low levels of interactivity in the sample (44.6% of all threads with at least two user replies). On average, initiators (M = .16, SD = .2) showed higher reciprocation than discussants (M = .04, SD = .09; see Table 1), confirming our proposition that their role is unique in conversations.

While this study did not test hypotheses about the relationship between different protest-related communicative functions and interactivity, we present some descriptive results derived from our content analysis on Table 2. We observed that showing support for the cause and sharing personal opinions or news about the movement were the most common functions. Among these functions, the latter two were by far the most conducive to heterogeneous reciprocal exchanges (8.72% of all discussions for information, 14.5% for personal opinion). On the other hand, functions which often receive considerable attention in relation to online protest communication, namely calling for mobilization and coordinating protest logistics, were not only quite rare in our sample, mirroring Theocharis and colleagues' (2015) findings, but also the ones displaying the highest in-group endogeneity in reciprocal exchanges.

Table 2. Reciprocity by Function of the Initial Tweet (N = 735).

Function initial tweet	*N*	Received replies (% of total)	Some reciprocity (% of received replies)	Some reciprocity (% of total)	Ideologically heterogeneous (% of some reciprocity)	Ideologically heterogeneous (% of total)
Political mobilization	48	32 (66.67)	11 (34.38)	11 (22.92)	2 (18.8)	2 (4.17)
Support	209	111 (53.11)	57 (51.35)	57 (27.27)	11 (19.3)	11 (5.26)
Information	149	109 (73.15)	33 (30.28)	33 (22.15)	13 (39.39)	13 (8.72)
Logistics (coordination)	9	5 (55.56)	3 (60)	3 (33.33)	0	0
Personal opinion	269	192 (71.38)	121 (63.02)	121 (44.98)	39 (32.23)	39 (14.5)
Other (unrelated)	51	37 (72.55)	21 (56.76)	21 (41.18)	2 (9.52)	2 (3.92)
Total	735	486 (66.12)	246 (50.62)	246 (33.47)	67 (27.24)	67 (9.12)

Hypothesis Testing

H1 tested whether initiator status was negatively associated with interactivity. Follower count followed the hypothesized direction of effects, whereas verified status either displayed the opposite pattern or was not significantly related to interactivity. Every 2.7-fold[4] increase in the number of followers decreased the expected ratio of initiator interactivity by 23% (*exp* (−.11 − .15) = .77), and that of discussants by 6% (*exp* (−.06) = .94). However, a verified initiator with 10,000 followers would be almost twice as likely to interact than a nonverified user with the same number of followers (*exp* (1.23 − .15 * log (10,000)) = 1.89). Verified status was not associated to discussant interactivity. Hence, H1 was partially supported (see Table 3, Models 1–2).

RQ1 asked whether sharing media or Web-based contents was related to interactivity. The presence of Web-contents in an initial tweet was positively associated with the overall degree of interactivity of both the initiator and discussants (.06 and .22, respectively). On the other hand, tweets containing media content were found to be negatively associated to initiator interactivity (−.06), while they bore no association with discussant interactivity (Models 1, 2).

Table 3. Zero-Inflated Negative Binomial Regression Predicting Interactivity.

	H1, RQ1, H2					
	Model 1: Initiator interactivity			Model 2: Discussant interactivity		
Count	*E*	*EXP(E)*	CI	*E*	*EXP(E)*	CI
(Intercept)	6.36	580.17***	523.36 –643.14	5.84	345.49***	264.45, 451.36
Account age (log)	0.05	1.05***	1.04, 1.07	0.00	1	0.97, 1.04
Follower count (log)	−0.11	0.9***	0.90, 0.91	−0.06	0.94***	0.92, 0.95
User verified	1.23	3.42***	2.36, 4.95	0.11	1.12	0.71, 1.76
Follower count * user verified	−0.15	0.86***	0.83, 0.89	−0.02	0.98	0.94, 1.02
Web-based content sharing	0.06	1.06***	1.03, 1.09	0.22	1.24***	1.16, 1.33
Media sharing	−0.06	0.94***	0.92, 0.96	−0.01	0.99	0.94, 1.04
Linguistic heterogeneity	−0.19	0.83***	0.82, 0.85	−0.22	0.8***	0.75, 0.86
Ideological heterogeneity						
Negative sentiment						
Zero-Inflated						
(Intercept)	−2.66	0.07***	0.05, 0.10	1.73	5.65***	3.60, 8.88
Account age (log)	−0.26	0.77***	0.73, 0.81	0.19	1.21***	1.14, 1.29
Follower count (log)	0.48	1.62***	1.58, 1.66	−0.14	0.87***	0.84, 0.89
User verified	−1.35	0.26*	0.09, 0.74	0.94	2.56*	1.16, 5.63
Follower count * user verified	0.18	1.2***	1.09, 1.32	−0.07	0.93*	0.87, 0.99
Web-based content sharing	0.67	1.96***	1.79, 2.15	0.40	1.49***	1.33, 1.67

[4] The natural logarithm of a number is its logarithm to the base of the mathematical constant *e*, approximately 2.71828. With log-transformed predictors, after exponentiating the coefficient, one can interpret it as having an effect on each *multiple* of the predictor (i.e., fold), rather than each *addition* (i.e., unit).

Media sharing	0.58	1.78***	1.65, 1.92	−0.09	0.91	0.83, 1.00
Linguistic heterogeneity	0.36	1.43***	1.33, 1.54	−0.76	0.47***	0.42, 0.53
Ideological heterogeneity						
Negative sentiment						
Observations		17,952			12,437	
Log likelihood		−62,780	17 *Df*		−23,430	17 *Df*
Theta		5.033			2.366	

	RQ2, H2					
	Models 3, 4: Initiator interactivity					
Count	*E*	*EXP(E)*	CI	*E*	*EXP(E)*	CI
(Intercept)	6.13	457.3***	242.28, 863.16	6.04	420.91***	227.26, 779.56
Account age (log)	0.07	1.07	0.98, 1.16	0.09	1.09*	1.01, 1.18
Follower count (log)	−0.08	0.92***	0.89, 0.96	−0.08	0.92***	0.88, 0.96
User verified	1.77	5.88	0.44, 77.65	1.47	4.35	0.33, 56.59
Follower count * user verified	−0.22	0.8	0.61, 1.04	−0.20	0.82	0.63, 1.07
Web-based content sharing	−0.17	0.84	0.69, 1.01	−0.14	0.87	0.72, 1.05
Media sharing	−0.07	0.93	0.82, 1.06	−0.07	0.93	0.81, 1.06
Linguistic heterogeneity				−0.17	0.84**	0.74, 0.95
Ideological heterogeneity	−0.16	0.85*	0.75, 0.97			
Negative sentiment	−0.08	0.92	0.81, 1.05	−0.08	0.92	0.81, 1.04
Zero-Inflated						
(Intercept)	−4.61	0.01**	0.00, 0.15	−4.61	0.01**	0.00, 0.12
Account age (log)	0.01	1.01	0.68, 1.50	0.03	1.03	0.70, 1.51
Follower count (log)	0.48	1.61***	1.34, 1.93	0.45	1.57***	1.31, 1.87
User verified	−3.51	0.03	0.00, 57.51	−3.91	0.02	0.00, 58.07
Follower count * user verified	0.43	1.54	0.74, 3.21	0.44	1.56	0.74, 3.28
Web-based content sharing	0.40	1.49	0.75, 2.95	0.37	1.45	0.73, 2.89
Media sharing	0.26	1.3	0.74, 2.29	0.24	1.27	0.72, 2.24
Linguistic heterogeneity				0.36	1.43	0.80, 2.55
Ideological heterogeneity	−0.12	0.89	0.51, 1.56			
Negative sentiment	−0.27	0.76	0.43, 1.36	−0.26	0.77	0.43, 1.37
Observations		333			333	
Log likelihood		−1551	19 *Df*		−1550	19 *Df*
Theta		5.038			5.068	

	RQ2, H2					
	Models 5, 6: Discussant interactivity					
Count	*E*	*EXP(E)*	CI	*E*	*EXP(E)*	CI
(Intercept)	11.55	104184.83***	2064.96, 5256508.42	10.10	24334.84***	627.53, 943677.82
Account age (log)	−0.73	0.48**	0.28, 0.80	−0.56	0.57*	0.35, 0.93
Follower count (log)	−0.06	0.94	0.86, 1.03	0.01	1.01	0.91, 1.11
User verified	1.41	4.08	0.11, 146.80	0.18	1.2	0.03, 44.16
Follower count * user verified	−0.06	0.94	0.71, 1.24	−0.01	0.99	0.75, 1.30

Web-based content sharing	0.25	1.28	0.84, 1.94	0.22	1.25	0.82, 1.89
Media sharing	−0.19	0.83	0.55, 1.24	0.04	1.04	0.67, 1.61
Linguistic heterogeneity				−0.84	0.43**	0.24, 0.80
Ideological heterogeneity	−0.58	0.56**	0.37, 0.86			
Negative sentiment	−0.54	0.58**	0.39, 0.85	−0.67	0.51***	0.35, 0.74
Zero-Inflated						
(Intercept)	9.47	13024.85**	27.82, 6098200.87	9.70	16238.89**	38.64, 6824268.63
Account age (log)	−0.71	0.49	0.21, 1.12	−0.65	0.52	0.23, 1.16
Follower count (log)	−0.31	0.73**	0.60, 0.90	−0.27	0.76*	0.62, 0.95
User verified	4.91	135.01	0.03, 622005.39	5.04	153.73	0.03, 842241.99
Follower count * user verified	−0.34	0.71	0.36, 1.40	−0.37	0.69	0.34, 1.39
Web-based content sharing	0.48	1.61	0.67, 3.90	0.54	1.71	0.69, 4.20
Media sharing	0.04	1.04	0.51, 2.14	0.07	1.07	0.51, 2.23
Linguistic heterogeneity				−1.43	0.24**	0.09, 0.66
Ideological heterogeneity	−0.27	0.76	0.36, 1.60			
Negative sentiment	−0.56	0.57	0.28, 1.13	−0.62	0.54	0.26, 1.10
Observations		242			242	
Log likelihood		−417.2	19 *Df*		−412.3	19 *Df*
Theta		3.004			3.050	

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

Note. The abbreviation *log* indicates that the predictor is log-transformed.

RQ2 asked about the relationships between negative sentiment in the initial tweet and initiator and discussant interactivity. Negative sentiment was not significantly related to initiator interactivity in the discussion thread, but was negatively related to the interactivity of other discussants. Compared with positive or neutral tweets, initial tweets expressing negative sentiment were related to a decrease in the expected discussant interactivity by more than half (*exp* (−.54) = .58; Models 3–6).

Finally, H2 tested whether linguistic and ideological heterogeneity in discussions were negatively related to initiator and discussant interactivity. Using the language proxy measure on the whole data set, results revealed that linguistic heterogeneity was negatively associated to both initiator and discussant interactivity (Models 1, 2). Interactivity decreased by 20% in heterogeneous threads compared with homogeneous threads where all users had the same profile language (*exp* (−.223) = .8). These results were replicated with the content analysis sample using the language proxy (Models 4, 6).

Results were similar for the content analysis-based measure of ideological heterogeneity (models 3, 5). Compared with ideologically homogeneous threads, discussant interactivity in threads with different ideological positions toward Catalan independence decreased by almost half (*exp* (−.58) = .56). Ideological heterogeneity was also negatively related to initiator interactivity, expected to decrease by a factor of −.16. Thus, H2 was supported.

Discussion

This study investigated whether citizens engaged in discussions on Twitter in the context of the Catalan independence referendum, in November 2014. It conducted an empirical examination of the factors contributing to interactive protest-related discussions using large-scale data from Twitter threads, finding that user followers, sharing media contents, negative sentiment, and ideological and linguistic heterogeneity were negatively related to interactivity, while verified user status and Web-content sharing related to greater interactivity. Overall, these findings align with theoretical propositions and extend previous findings about the nature of citizen political discussion in the digital realm.

First, our findings suggest that while highly-followed profiles may often attract large numbers of reactions, it is only those whose public interest role is recognized (i.e., verified profiles) that both interact with their public as well as act as mediators for citizen discussion (González-Bailón & Wang, 2016). These profiles displayed interactivity rates equal or superior to the ordinary user, which speaks to their relevance for sustaining the public sphere even in times of social unrest and division. Second, the much widespread practice of sharing media contents (i.e., photos/videos; 32.45%) was not regularly followed by dialogical practices. This is coherent with the expectation that different content types fulfil distinct gratifications: While news may promote debate, the often symbolic protest visuals may serve rather expressive and movement-framing functions (Neumayer & Rossi, 2018), leading to sharing more so than spurring political talk.

Third, the low interactivity rates and large number of threads with no reciprocation observed in our sample seem to confirm that mostly vertical, many-to-one discussions spurred around the Catalan independence referendum protests. However, this should not lead to precipitate conclusions about the legitimacy of this type of citizen communicative behavior and its deliberative quality, as its value may lie on its potential for self-expression and collective identity construction. Our findings are in line with accounts that conceptualize online political discussions as a rather expressive mode of participation (Gibson & Cantijoch, 2013; Rojas & Puig-i-Abril, 2009), arguably more reactive and spontaneous than other types of communicative behaviors. They are also consistent with the logic of connective action proposed by Bennett and Segerberg (2012), which is based on personalized content sharing across large-scale networks as a type of mobilizing behavior.

Fourth, in line with the previous arguments are our findings about the relationship between ideological heterogeneity and interactivity. While heterogeneous discussions did take place (55.55% of content analysis sample), the strong component of group identity driving behavior in a context of protest may be a powerful motivator for discussants to interact mostly within group boundaries. Especially in the case of self-determination movements, whose dynamics highlight strong territorial tensions (Castelló, León-Solís, & O'Donnell, 2016; Park, Jongerden, Owtram, & Yoshioka, 2017). More speculatively, the lower likelihood of cross-cutting interactions could be interpreted as a relatively limited access of the general public to movement-specific online interpersonal discussions, symptomatic of the dynamics of a profoundly divisive debate in Spanish society.

Finally, despite the centrality of negativity in the framing of protest messages around such concepts as injustice or blame (Benford & Snow, 2000), negative sentiment does not attract discussion. In contexts

of protest, where negative collective sentiments such as anger are not only common but also necessary (Van Stekelenburg & Klandermans, 2017), the elicitation of such emotions to sympathetic online audiences may ultimately encourage others to join the discontent (see Jost et al., 2018). Negative messages may fundamentally serve a need for self-expression and thus not motivate horizontal, interactive communication.

Together, our results suggest that online protest-related discussions around the Catalan independence referendum were a form of collective expression, rather than an interactive communicative practice. Their relevance as a citizen participatory behavior may lie in the fact that they build support for collective action through symbolic, personalized contributions. They may equally contribute to developing the collective emotions of protest. Ultimately, users' engagement in this form of discussion may foster mobilization when it spurs subsequent communicative behaviors promoting political engagement, such as face-to-face discussions or news use (e.g., Gil de Zúñiga, Ardèvol-Abreu, & Casero-Ripollés, 2019).

This study has several limitations. First, while it suggests that ideological and linguistic homogeneity facilitate interactive exchanges, potential echo chambers created by network structures and algorithms prevents us from making generalizations about the extent to which heterogeneous discussions are less interactive. Future research is needed that can account for what users are actually exposed to when discussing on social media. Second, the study's generalizability is limited by the specific case study and the Twitter platform. While our study did not compare Twitter discussions to other social media platforms, we can conjecture that more private social media may be able to foster greater reciprocation (e.g., WhatsApp; Vermeer, Kruikemeier, Trilling, & de Vreese, 2020). Further studies should examine different protests and the interaction between platform affordances and user conventions.

Despite the limitations, this study has presented insights on interpersonal protest-related conversations that nuance current understandings of online social movements. While the rapid diffusion of protest-related information is crucial for movements to expand their scope, in the online realm such communicative practices seem to be effective mostly within sympathetic circles. From this cumulative-metric perspective, the conclusion that the impact of social media discussions on offline protest is modest seems the most cautious (see Jost et al., 2018). Yet, more generally, movements need public acceptance, which must come from outside supporting circles, or else they risk failing to solidify support or to ensure policy change (Gamson, 1990). For the latter, some degree of cross-cutting exchange is arguably necessary, which may be hard to capture if we only attend to communicative practices inherently aimed at mobilizing support in highly polarized media and political landscapes. Thus, a focus on interactivity and the ordinary interpersonal exchange is advantageous to the literature on online protest movements in that it speaks to the protest's potential for success in achieving (some) public acceptance.

References

Balcells, J., & Padró-Solanet, A. (2020). Crossing lines in the Twitter debate on Catalonia's independence. *The International Journal of Press/Politics*, *25*(1), 28–52. doi:10.1177/1940161219858687

Barberá, P., Jost, J. T., Nagler, J., Tucker, J. A., & Bonneau, R. (2015). Tweeting from left to right: Is online political communication more than an echo chamber? *Psychological Science, 26*(10), 1531–1542. doi:10.1177/0956797615594620

Benford, R. D., & Snow, D. A. (2000). Framing processes and social movements: An overview and assessment. *Annual Review of Sociology*, *26*(1), 611–639. doi:10.1146/annurev.soc.26.1.611

Bennett, W. L., & Segerberg, A. (2012). The logic of connective action: Digital media and the personalization of contentious politics. *Information, Communication & Society, 15*(5), 739–768. doi:10.1080/1369118X.2012.670661

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.1083-6101.2007.00393.x

Brunet, J. M. (2014, November 5). *El TC suspende por unanimidad la consulta alternativa del 9N* [The Constitutional Court of Spain unanimously suspends the alternative referendum of November 9]. Retrieved from https://www.lavanguardia.com/politica/20141104/54418558221/tc-suspende-unanimidad-consulta-alternativa-9n.html

Bruns, A., & Burgess, J. (2011). The use of Twitter hashtags in the formation of ad hoc publics. In *Proceedings of the 6th European Consortium for Political Research (ECPR) General Conference 2011* (pp. 1–9). Colchester, UK: The European Consortium for Political Research (ECPR).

Burgess, J., & Bruns, A. (2012). (Not) the Twitter election: The dynamics of the #ausvotes conversation in relation to the Australian media ecology. *Journalism Practice, 6*(3), 384–402. doi:10.1080/17512786.2012.663610

Castelló, E., León-Solís, F., & O'Donnell, H. (2016). Spain, Catalonia and the Scottish referendum: A study in multiple realities. In N. Blain, D. Hutchison, & G. Hassan (Eds.), *Scotland's referendum and the media: National and international perspectives* (pp. 159–172). Edinburgh, UK: Edinburgh University Press.

Castells, M. (2012). *Networks of outrage and hope: Social movements in the age of the Internet.* London, UK: Polity.

Child, D. (2017, October 01). Catalonia vote: Social media mirrors street tension. *Al Jazeera.* Retrieved from https://www.aljazeera.com/news/2017/10/1/catalonia-vote-social-media-mirrors-street-tension

Chmiel, A., Sienkiewicz, J., Thelwall, M., Paltoglou, G., Buckley, K., Kappas, A., & Hołyst, J. A. (2011). Collective emotions online and their influence on community life. *PLOS ONE*, *6*(7), 1–8. doi:10.1371/journal.pone.0022207

Conover, P. J., & Miller, P. R. (2018). Taking everyday political talk seriously. In A. Bächtiger, J. S. Dryzek, J. Mansbridge, & M. Warren (Eds.), *The Oxford handbook of deliberative democracy* (pp. 378–391). Oxford, UK: Oxford University Press.

Crameri, K. (2015). Political power and civil counterpower: The complex dynamics of the Catalan independence movement. *Nationalism and Ethnic Politics*, *21*(1), 104–120. doi:10.1080/13537113.2015.1003491

D'heer, E., & Verdegem, P. (2014). Conversations about the elections on Twitter: Towards a structural understanding of Twitter's relation with the political and the media field. *European Journal of Communication, 29*(6), 720–734. doi:10.1177/0267323114544866

Endersby, J. W., & Towle, M. J. (1996). Tailgate partisanship: Political and social expression through bumper stickers. *The Social Science Journal*, *33*(3), 307–319. doi:10.1016/S0362-3319(96)90026-9

Eveland, W. P., Jr., Morey, A. C., & Hutchens, M. J. (2011). Beyond deliberation: New directions for the study of informal political conversation from a communication perspective. *Journal of Communication*, *61*(6), 1082–1103. doi:10.1111/j.1460-2466.2011.01598.x

Evolvi, G. (2019). #Islamexit: Inter-group antagonism on Twitter. *Information, Communication & Society*, *22*(3), 386–401. doi:10.1080/1369118X.2017.1388427

Freelon, D. (2015). Discourse architecture, ideology, and democratic norms in online political discussion. *New Media & Society, 17*(5), 772–791. doi:10.1177/1461444813513259

Frijda, N. H. (1988). The laws of emotion. *American Psychologist*, *43*(5), 349–358. doi:10.1037/0003-066X.43.5.349

Gamson, W. A. (1990). *The strategy of social protest* (2nd ed.). Belmont, CA: Wadsworth Publishing.

Garrett, R. K. (2006). Protest in an information society: A review of literature on social movements and new ICTs. *Information, Communication & Society, 9*(02), 202–224. doi:10.1080/13691180600630773

Gerbaudo, P. (2012). *Tweets and the streets: Social media and contemporary activism*. London, UK: Pluto.

Gibson, R., & Cantijoch, M. (2013). Conceptualizing and measuring participation in the age of the Internet: Is online political engagement really different to offline? *The Journal of Politics, 75*(3), 701–716. doi:10.1017/S0022381613000431

Gil de Zúñiga, H., Ardèvol-Abreu, A., & Casero-Ripollés, A. (2019). WhatsApp political discussion, conventional participation and activism: Exploring direct, indirect and generational effects. *Information, Communication & Society, 24*(2), 201–218. doi:10.1080/1369118X.2019.1642933

Goodwin, J., & Jasper, J. (2006). Emotions and social movements. In J. Stets & J. Turner (Eds.), *Handbook of the sociology of emotions* (pp. 611–635). New York, NY: Springer.

González-Bailón, S., Borge-Holthoefer, J., & Moreno, Y. (2013). Broadcasters and hidden influentials in online protest diffusion. *American Behavioral Scientist, 57*(7), 943–965. doi:10.1177/0002764213479371

González-Bailón, S., & Wang, N. (2016). Networked discontent: The anatomy of protest campaigns in social media. *Social Networks, 44*(1), 95–104. doi:10.1016/j.socnet.2015.07.003

Guntermann, E. (2017). Party influence where predispositions are strong and party identification is weak: Assessing citizens' reactions to party cues on regional nationalism in Spain. *Party Politics*, *25*(4), 609–620. doi:10.1177/1354068817736756

Holton, A. E., Baek, K., Coddington, M., & Yaschur, C. (2014). Seeking and sharing: Motivations for linking on Twitter. *Communication Research Reports, 31*(1), 33–40. doi:10.1080/08824096.2013.843165

Huckfeldt, R. R., & Sprague, J. (1995). *Citizens, politics and social communication: Information and influence in an election campaign*. New York, NY: Cambridge University Press.

Jost, J. T., Barberá, P., Bonneau, R., Langer, M., Metzger, M., Nagler, J., . . . & Tucker, J. A. (2018). How social media facilitates political protest: Information, motivation, and social networks. *Political Psychology, 39*(S1), 85–118. doi:10.1111/pops.12478

Jungherr, A. (2016). Twitter use in election campaigns: A systematic literature review. *Journal of Information Technology and Politics, 13*(1), 72–91. doi:10.1080/19331681.2015.1132401

Klandermans, P. G. (2014). Identity politics and politicized identities: Identity processes and the dynamics of protest. *Political Psychology, 35*(1), 1–22. doi:10.1111/pops.12167

Ksiazek, T. B., Peer, L., & Lessard, K. (2016). User engagement with online news: Conceptualizing interactivity and exploring the relationship between online news videos and user comments. *New Media & Society, 18*(3), 502–520. doi:10.1177/1461444814545073

Kwak, H., Lee, C., Park, H., & Moon, S. (2010, April). What is Twitter, a social network or a news media? *Proceedings of the 19th International Conference on World Wide Web* (pp. 591–600). New York, NY: Association for Computing Machinery.

Lee, C. S., & Ma, L. (2012). News sharing in social media: The effect of gratifications and prior experience. *Computers in Human Behavior, 28*(2), 331–339. doi:10.1016/j.chb.2011.10.002

Llewellyn, C., & Cram, L. (2016, March). Brexit? Analyzing opinion on the UK–EU referendum within Twitter. *Proceedings of the 10th International AAAI Conference on Web and Social Media* (pp. 760–761). Palo Alto, CA: AAAI.

Melucci, A. (1996). *Challenging codes: Collective action in the information age*. Cambridge, MA: Cambridge University Press.

Mutz, D. C. (2006). *Hearing the other side: Deliberative versus participatory democracy*. New York, NY: Cambridge University Press.

Neumayer, C., & Rossi, L. (2018). Images of protest in social media: Struggle over visibility and visual narratives. *New Media & Society*, *20*(11), 4293–4310. doi:10.1177/1461444818770602

Newman, N., Fletcher, R., Schulz, A., Andi, S., & Nielsen, R. K. (2020). Digital news report 2020. *Reuters Institute for the Study of Journalism*, 2020–06. Retrieved from https://reutersinstitute.politics.ox.ac.uk/sites/default/files/2020-06/DNR_2020_FINAL.pdf

Ogan, C., & Varol, O. (2017). What is gained and what is left to be done when content analysis is added to network analysis in the study of a social movement: Twitter use during Gezi Park. *Information, Communication & Society, 20*(8), 1220–1238. doi:10.1080/1369118X.2016.1229006

Park, B., Jongerden, J., Owtram, F., & Yoshioka, A. (2017). On the independence referendum in the Kurdistan Region of Iraq and disputed territories in 2017. *Kurdish Studies*, *5*(2), 199–214. doi:10.33182/ks.v5i2.445

Pavlenko, A., & Blackledge, A. (Eds.). (2004). *Negotiation of identities in multilingual contexts* (Vol. 45). Clevedon, UK: Multilingual Matters.

Pratto, F., & John, O. P. (1991). Automatic vigilance: The attention-grabbing power of negative social information. *Journal of Personality and Social Psychology*, *61*(3), 380–391. doi:10.1037/0022-3514.61.3.380

Prior, M. (2007). *Post-broadcast democracy: How media choice increases inequality in political involvement and polarizes elections*. New York, NY: Cambridge University Press.

Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. New York, NY: Simon & Schuster.

Rojas, H., & Puig-i-Abril, E. (2009). Mobilizers mobilized: Information, expression, mobilization and participation in the digital age. *Journal of Computer-Mediated Communication*, *14*(4), 902–927.

RStudio Team. (2020). *RStudio: Integrated development for R*. Boston, MA: RStudio, PBC. Retrieved from http://www.rstudio.com/products/rstudio/

Saeed, S. (2017, October 2). How Europe's press reacted to the Catalan independence vote. *Politico.* Retrieved from https://www.politico.eu/article/catalan-independence-vote-how-europes-press-reacted-to-the-catalan-independence-vote/

Saiz, S. (2014, November 11). Id, votad y tuiteadlo [Go, vote, and tweet it]. *El Mundo*. Retrieved from http://www.elmundo.es/enredados/2014/11/10/54607a1fe2704eb53e8b456c.html

Searle, J. R., Parret, H., & Verschueren, J. (1992). *(On) Searle on conversation*. Amsterdam, PA: John Benjamins.

Simon, B., & Klandermans, B. (2001). Politicized collective identity: A social psychological analysis. *American Psychologist*, *56*(4), 319–331. doi:10.1037/0003-066X.56.4.319

Theocharis, Y., Lowe, W., Van Deth, J. W., & García-Albacete, G. (2015). Using Twitter to mobilize protest action: Online mobilization patterns and action repertoires in the Occupy Wall Street, Indignados, and Aganaktismenoi movements. *Information, Communication & Society*, *18*(2), 202–220. doi:10.1080/1369118X.2014.948035

Toepfl, F., & Piwoni, E. (2015). Public spheres in interaction: Comment sections of news websites as counterpublic spaces. *Journal of Communication, 65*(3), 465–488. doi:10.1111/jcom.12156

Tromble, R. (2018). Thanks for (actually) responding! How citizen demand shapes politicians' interactive practices on Twitter. *New Media & Society, 20*(2), 676–697. doi:10.1177/1461444816669158

Tufekci, Z., & Wilson, C. (2012). Social media and the decision to participate in political protest: Observations from Tahrir Square. *Journal of Communication, 62*(2), 363–379. doi:10.1111/j.1460-2466.2012.01629.x

Twitter. (n.d.). *About verified accounts*. Twitter. Retrieved from https://help.twitter.com/en/managing-your-account/about-twitter-verified-accounts

Valenzuela, S. (2013). Unpacking the use of social media for protest behavior: The roles of information, opinion expression, and activism. *American Behavioral Scientist, 57*(7), 920–942. doi:10.1177/0002764213479375

Van Stekelenburg, J., & Klandermans, B. (2017). Individuals in movements: A social psychology of contention. In C. Roggeband & B. Klandermans (Eds.), *Handbook of social movements across disciplines* (pp. 103–139). Cham, Switzerland: Springer.

Vermeer, S. A., Kruikemeier, S., Trilling, D., & de Vreese, C. H. (2020). WhatsApp with politics?! Examining the effects of interpersonal political discussion in instant messaging apps. *The International Journal of Press/Politics*, *26*(2), 410–437.

Wu, S., Hofman, J. M., Mason, W. A., & Watts, D. J. (2011). *Who says what to whom on Twitter. Proceedings of the 20th International Conference on World Wide Web* (pp. 705–714). New York, NY: Association for Computing Machinery.

Yarchi, M., Baden, C., & Kligler-Vilenchik, N. (2020). Political polarization on the digital sphere: A cross-platform, over-time analysis of interactional, positional, and affective polarization on social media. *Political Communication, 38*(1/2), 98–139.

Yardi, S., & boyd, d. (2010). Dynamic debates: An analysis of group polarization over time on Twitter. *Bulletin of Science, Technology & Society, 30*(5), 316–327. doi:10.1177/0270467610380011

Zeileis, A., Kleiber, C., & Jackman, S. (2008). Regression models for count data in R. *Journal of Statistical Software*, *27*(8), 1–25. doi:10.18637/jss.v027.i08

Ziegele, M., Springer, N., Jost, P., & Wright, S. (2018). Online user comments across news and other content formats: Multidisciplinary perspectives, new directions. *SCM Studies in Communication and Media, 6*(4), 315–332. doi:10.5771/2192-4007-2017-4-315

Zubiaga, A., Liakata, M., Procter, R., Hoi, G. W. S., & Tolmie, P. (2016). Analysing how people orient to and spread rumours in social media by looking at conversational threads. *PLOS ONE*, *11*(3), 1–29. doi:10.1371/journal.pone.0150989