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Source effects in the micro-mobilization of collective action via social media

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Research has shown that micro-mobilization efforts that invoke social media rely heavily on the influence of personal networks to motivate collective action participation. This study examines whether this trend applies (a) to networks of different levels of personalness, (b) to causes and organizations which people are either unaware of or not affiliated with, and (c) how personal networks affect people's willingness to participate in online versus offline forms of collective action, when personal dispositional factors (activism- and issue-involvement, perceived self-, technological-, and group efficacies) are considered. An experiment ($N = 315$) tested whether calls-to-action by different sources via social media (close personal networks v. distant social networks v. organization officials) influence individuals' willingness to publicly express support online through social media-based collective activities (e.g. commenting, hyperlinking, 'Liking', etc.) and offline activities (e.g. demonstrations, donning campaign materials, etc.). Findings are leveraged to provide practical insight and to inform theoretical development in these domains.

Keywords: collective action; social media; source effects; social networks; activism; micro-mobilization

Processes of micro-mobilization via social networking technologies, where individuals are solicited by people in their online networks through messages informing and inviting them to contribute toward a common cause, are increasingly crucial in forming and sustaining collective action efforts. Being asked and invited by others is, indeed, the critical factor that predicts the activation and future participation of otherwise uninformed and uninitiated individuals (McAdam, 1986; Van Aelst & Walgrave, 2002). Accordingly, communication research on the use of social media to facilitate user activism is increasingly focused on, and has widely established the strong influence of close personal networks to motivate individual participation in both offline and online types of collective actions (e.g. Bakardjieva, 2012; Biddix & Park, 2008; Fisher & Boekkooi, 2010; Harlow & Harp, 2012; Maireder & Schwarzenegger, 2011; Tufekci & Wilson, 2012).

Yet, this line of research has largely focused on collective causes that are already known to individuals who are targeted for involvement, who also tend to be affiliated with the organizations spearheading the collective effort. The present study deviates from this trajectory by examining,

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instead, the potential of various interpersonal sources to spur the involvement of otherwise unaffiliated and uninformed individuals via social media, and for causes that are previously unheard of by the individuals. This shift is important given the increasing prominence of this type of involvement which is symptomatic of the rapid development of activist and social movements aided by social networking technologies, such as the Arab Spring and #Occupy (Juris, 2012; Lim, 2012; Tufekci & Wilson, 2012) to the most recent student-led protests in Hong Kong in 2014, for example.

This study further fills a void in online collective action research by investigating the relationship between different interpersonal influencers and their potential to spur individual participation across different forms of online and offline collective activities via social media, accounting for individual factors such as personal issue involvement, prior involvement in activism, and perceived self-, technological-, and group efficacies at the same time. To do so, the potential of *invitational acts* stemming from different interpersonal sources is broken down to varying degree of *personalness* (close personal networks v. distant social networks v. organizational sources), as is their connection to individuals' willingness to carry out between different publicly expressive collective activities online via social media (e.g. commenting, hyperlinking information) and in offline venues (e.g. attending demonstrations, wearing campaign-related materials). The varying capacity of these sources to mobilize individuals to participate in the online and offline activities is thus examined.

Collective activities and participation thresholds

The repertoire of collective activities that activist organizations encourage, and that individuals can participate in, has greatly diversified due to the Internet and social networking technologies (e.g. Earl & Kimport, 2011; Van de Donk, Loader, Nixon, & Rucht, 2004). The activities can be classified according to their levels of intensity (i.e. possibility of confrontation or physical force), effort (Klandermans, 1997), and perceived risk of participation (i.e. 'collection of anticipated dangers from engaging in a certain activity') (McAdam, 1986, p. 67). In many cases, acting on personal interests involves the crossing of a 'private to public boundary' that reveals one's preferences publicly in the process of achieving collective goals (Bimber, Flanagin, & Stohl, 2005).

Van Laer and Van Aelst (2010) propose activities ranging from *low* to *high* participation thresholds, depending on the participation barriers posed to individuals. Activities with greater barriers require a higher level of personal commitment (e.g. time and personal sacrifice) and entail more personal costs and risks (e.g. physical or monetary).

Studies suggest that *offline* activities, such as attending public demonstrations and protests, typically require a higher level of personal commitment in terms of time and effort and can entail potentially greater risks (e.g. physical or monetary) (Klandermans, 1997; McAdam, 1986). Accordingly, scholars have shown how individuals are less likely to participate in confrontational offline activities that are perceived as very risky, such as protests and strikes (Carty, 2010; Postmes & Brunsting, 2002). Nevertheless, the tendency for these activities to involve a sizeable and visible number of people has been shown to be effective in establishing a movement's legitimacy, unity, and the solidarity of its supporters against an oppositional group or target (e.g. Klandermans, 1997; McAdam, Tarrow, & Tilly, 2003).To assess people's willingness to take part in offline collective action efforts, in the present study we consider a range of offline activities including (1) participation in mass street actions (e.g. protests, rallies, demonstrations), (2) disseminating information (e.g. talking to others and disseminating campaign materials such as fliers, pens, badges, etc.), and (3) publicly identifying with the cause (e.g. donning apparel such as wristbands and t-shirts that identify with the cause or organization).

Online activities, such as those typically done on social networking platforms, by contrast, tend to be more expressive than action-oriented in nature, which makes them potentially less outwardly confrontational and less intense. Nonetheless, carrying out publicly expressive activities on social media entails the exposition of personal identity, which makes it difficult for individuals to control their privacy and contribute to such actions anonymously (Bimber et al., 2005; Earl, 2012). To assess people's willingness to take part in online collective activities that require different levels of social communication and public expression of personal opinions and support for activism, in this study we consider a range of activities that are typically done on social media including (1) commenting, (2) relaying information received, (3) uploading materials, and (4) affiliating, 'Following', or 'Liking' information via social media.

The 'constant communicative process between members of the community' attained from these public expressions of support online enhances the recruitment and mobilization of participants (Maireder & Schwarzenegger, 2011, p. 182) by facilitating real-time, quick, and efficient coordination for protests and demonstrations mobilization (Juris, 2012; Rheingold, 2003), and contributes to 'public goods' by increasing visibility of and perspectives on a variety of 'social problems' (Tatarchevskiy, 2011, p. 300). Indeed, interactive and expressive communicative activities have been widely attributed in the successes of recent activist movements such as the Arab Spring revolution and #Occupy movement (Harlow, 2011; Juris, 2012; Lim, 2012; Tufekci & Wilson, 2012), to the degree that the former movement has been touted as the 'Facebook (or Twitter) revolution' by political leaders and the mass media (Maireder & Schwarzenegger, 2011, p. 173).

To test whether participation thresholds differ between offline and social-media-based collective activities, and to discern individuals' willingness to participate in one form over the other when invited by others via social media, the following questions and hypothesis are forwarded:

> RQ1: What is the relative willingness of people to perform offline and online collective activities on social media?

> H1: Individuals will be more willing to participate in online forms of collective activities via social media, as compared to offline activities.

Source personalness and influences on collective action participation

Undoubtedly, a crucial link in mobilizing collective action participation via social media is the source that solicits participation. Bennett and Segerberg (2012), for example, argue that *online connective action* through personal networks strongly motivates individuals to carry out publicly expressive collective activities through social media. Two elements of direct 'personalized communication' aid in the process of connective action between individuals. The first is the ease of personalization of ideas and political content. When messages and ideas are sent through an individual's personal networks, others in these networks (e.g. friends, colleagues, acquaintances) reformulate the messages and create personal 'action frames' by imbuing them with personal ideas and comments that help bridge differences with how the individual may feel about the message and its intent (e.g. via memes, photovoices, etc.) (Benkler, 2006; Knobel & Lankshear, 2007). Similarly, Bimber et al. (2005) note that the boundary-crossing capacity of contemporary technologies helps to transfer private or semi-private information, such as one's perspectives on a topic or one's political agenda or opinions, to public venues (e.g. through shared online social networks, or even recipient information gleaned from email headers), thereby expanding the visibility and importance of interpersonal connections.

The second element of direct 'personalized communication' aiding in connective action is the ability of social communication technologies to enable the sharing of these personal action frames. This process may involve messages being passed through several layers of personal networks that 'often involves further personalization through the spreading of digital connections among personal networks of friends or trusted others' (Bennett & Segerberg, 2012, pp. 744–745). In this manner, connective actions emphasize the dissemination of messages amongst people in common networks that motivates individual participation toward collective outcomes by 'reframing' messages and expressing personal support in ways that enable receivers to see how the cause is relevant to their personal circles and, by extension, to them. Consistent with Klandermans and Oegema's (1987) argument for social motives in collective action, one's interest in fostering personal relationships and affiliation with others helps predict one's contributions to the organization's goals and agenda (Bimber, Flanagin, & Stohl, 2012).

Theoretical explications have thus shown that personal connections can be highly influential in motivating collective action participation. Yet, social media sources can represent varying degrees of *personalness*, comprising people from both *personal* networks and relatively more *impersonal* ones (i.e. distant social networks and organizational officials and representatives). People in *close personal networks* typically include one's friends, family members, colleagues, and peers from school or work (Fisher & Boekkooi, 2010). These sources can be seen as reference groups, or those whose collective opinions and perspectives constitute the frame of reference for individuals and help orient them to the significance of certain socio-political issues (Glynn & Park, 1997; Oshagan, 1996).

Fisher and Boekkooi (2010), for example, surveyed participants in 10 different street demonstrations in the United States and showed the main way in which individuals heard about the event and were encouraged to participate via personal networks through the Internet (i.e. websites, social networking sites). Others have shown how online communication with one's personal networks serves as an important bridge connecting protest participants to movements (Diani, 2000), and is instrumental in 'transferring knowledge and raising issue salience' (Hooghe, Vissers, Stolle, & Mahéo, 2010, p. 406), fostering relational trust among communities of activists and potential members (Meikle, 2002), familiarizing friends to the cause and protest-related activities (Mercea, 2012), and affirming individuals' belief in the legitimacy of the activist group and the suitability of the tactics employed (Thackeray & Hunter, 2010).

Consistent with Granovetter's strength of weak ties hypothesis (1973), one's impersonal *distant social networks* on social networking sites can also avail them to collective action information and opportunities. For example, De Zúñiga and Valenzuela (2011) found a greater direct relationship between engagement in collective civic activities, the size of one's distant social networks online (weak-tie networks), and frequency of socio-political discussions with people from more distant social networks as compared to family and friends. Others have demonstrated how these looser-tied online contacts provide social capital that buoys individual participation in instrumental collective action (e.g. boycotts, attending rallies, signing petitions) (Son & Lin, 2008), and aids in the real-time online coordination and mobilization of participants for offline protests (Juris, 2012).

In one of the more robust studies that examined the influence of interpersonal sources on the political mobilization of social media users, Bond et al. (2012) carried out a '61million-person-experiment' and showed that invitations to vote by social sources (i.e. having faces of friends in the messages) were more likely to motivate action (i.e. clicking online voting banner, seeking information, real-world voting) as compared to receiving purely informational messages or no messages at all. Between the social sources, mobilization rate increases when strong-tied close friends (i.e. greater Facebook interactions) had passed the messages as compared to weak-tied ones. However, comparisons were done only between personal sources that

individuals either know or recognize, as are generally done in other similar studies discussed above.

Apart from personal sources, social media users can receive messages directly from *organizational sources* – typically from organizational leaders, spokespersons for the group, or group committees (McCarthy & Wolfson, 1996) – that can affect their willingness to participate in collective action. For example, leaders' fervor and charisma constitute two of the most consistent predictors of mobilization for social movements (Herda-Rapp, 1998; McCarthy & Wolfson, 1996) and organizational sources have been found to 'induct people into activism' (Mercea, 2012, p. 165), especially when individuals heuristically view them as 'cognitive authorities' on a particular cause (Wilson, 1983). This is where messages disseminated by them are deemed more credible due to their personal expertise and direct experience with the cause. However, individuals may also perceive biases from organizational sources that may diminish their influence. Internet users, for example, tend to perceive ulterior motives from message sources as a 'major negative heuristic cue for making credibility judgments' (Metzger, Flanagin, & Medders, 2010, p. 432). In the context of the Iraq war protests in 2003, Bennett, Breunig, and Givens (2008) compared online messages coming from socio-political organizations such as churches and peace groups to those from one's peers and acquaintances and showed that the latter provided a far stronger explanation for protest participation and diffusion.

Although studies have demonstrated the relative potential of personal and impersonal networks to mobilize individuals for collective action, the capacity of different sources to influence individuals to participate in online and offline forms of collective activities may also vary in meaningful ways. It is plausible, for example, that a highly personal source is required to persuade individuals to participate in offline activities that require greater persuasion thresholds, whereas participation in lower threshold activities on social media is motivated sufficiently by invitations from more impersonal sources. The relative influences of different sources on motivating participation, and the interaction between these sources and various online and offline collective activities, are addressed by H2 and RQ2:

RQ2: Does the influence from different sources vary for online and offline activities?

H2: Individuals will be most willing to participate in collective action if they are invited via social media by a source belonging to their (a) close personal network, followed by (b) distant social network sources, and (c) organizational sources.

Personal involvement and efficacy beliefs in collective action

A variety of additional influences can also directly influence individuals' participation in collective activities. *Personal issue involvement*, or the congruity of a particular cause with one's personal beliefs, describes attitudinal predispositions toward an issue that helps 'determine expressive actions, with individuals typically speaking on behalf of groups whose cause they share, and against those whose cause they oppose' (Boyle et al., 2006, p. 271; Kim, 2009). Such personal convictions hold crucial mobilization potential for activist groups when individuals co-orientate around the goals of these groups (Klandermans & Oegema, 1987), thereby motivating them to not only contribute to the cause, but also spread information supporting the cause and rallying others to join, especially when they are strongly affiliated to the group and its causes (Bullock et al., 2002).

Prior involvement in activism can influence future involvement in collective activities as well. In a study of collective action mobilization for environmental activism, prior involvement was instrumental in the participation of people of varying involvement backgrounds (i.e. hardcore,

sympathizers, non-activists), as well as across 'soft' and 'hard' forms of both online and offline collective activities (Postmes & Brunsting, 2002). Past participation in soft forms of collective activities (e.g. online: e-petitions, email-writing; offline: signing petitions, letter-writing) as well as hard forms (e.g. offline protests) significantly predicted willingness to participate in future activities to support the cause within, and across, the platforms.

Various forms of perceived efficacy may also affect participation in collective action. *Perceived self-efficacy* in carrying out collective action for activism, for example, has been shown to motivate individual participation in civic and political campaign activities (Morrell, 2003) and collective action mobilization (Yeich & Levine, 1994). *Perceived group efficacy* refers to one's beliefs that group-related problems can be solved by collective effort (Bandura, 1995) and the perception that the group provides collective advantage in bringing about the proposed outcomes (McLeod & Hertog, 1999). A series of experiments that examined students' 'collective action tendencies' (Van Zomeren, Spears, Fischer, & Leach, 2004) demonstrated the predictive consistency of perceived group efficacy, as well as the positive mediation of this perception on instrumental action support on collective action tendencies (i.e. 'standing united when the going gets tough' to achieve shared objectives) (p. 662). Finally, *perceived technological efficacy*, or, in this study's context, individuals' understanding of how the collective action process works through social media and confidence in their ability to carry out related activities using the platform, can also affect people's willingness to contribute to collective action efforts online (but not necessarily offline). For example, Facebook users who are more active online and are higher-frequency commenters are also savvier when it comes to collecting signatures for e-petitions and coordinating online demonstrations to aid collective action in online platforms (Harlow & Harp, 2012).

This study considers the role of these dispositional factors in individuals' willingness to partake in publicly expressive collective activities after receiving invitational messages from sources of varying levels of personalness. Personal involvement with activism, and people's perceived self- and group efficacies, should positively affect their willingness to contribute to collective action in both online and offline settings, whereas perceived technological efficacy should only determine people's willingness to participate in collective action efforts online. H3 and H4 consider these issues, and enable comparison across offline and online activism efforts. RQ3 asks whether the effects of source personalness, as suggested in H2 and RQ2, endure once these factors are accounted for.

RQ3: Is the influence of source personalness consequential after individuals' personal involvement with activist campaigns, issue involvement, and perceived self-, technological-, and group efficacies are accounted for?

H3: Individuals' willingness to carry out collective activities *online* via social media is positively related to their (a) personal involvement with activism, (b) issue involvement, (c) perceived self-efficacy, (d) perceived technological efficacy, and (e) perceived group efficacy.

H4: Individuals' willingness to carry out collective activities *offline* is positively related to their (a) personal involvement with activism, (b) issue involvement, (c) perceived self-efficacy, and (d) perceived group efficacy.

Method

Participants and procedures

An experiment manipulating online sources of activist mobilizing messages representing different levels of *personalness* to individuals was conducted online with 315 student participants enrolled in a large public university in the United States. Participants were undergraduates majoring in communication and information studies and recruited through emails soliciting voluntary participation. About 59% (*n* = 186) of participants were female, and the average age of all participants

was 19.6 (SD = 1.33). Two sets of online questionnaires hosted by web-based survey site, Qualtrics, were administered and emailed to participants at two intervals. The first questionnaire collected personal dispositional factors (participants' prior involvement in activist campaigns, issue involvement, and perceived self-, group-, and technological efficacies). This was done beforehand in efforts to remove any systematic influences from the self-reporting of individual factors on the post-manipulation dependent measures. Participants were then randomly assigned and exposed to the stimulus material, one of the three source conditions, and the post-test survey in the second questionnaire seven days after completion of the first.

Stimulus

The stimulus consisted of a message by a fictional student environmental activist group on campus that read: 'The University is removing the Quad [Central Park on campus] to build classrooms and offices. The group Students for Nature is campaigning against this. Please support.' The stimulus reflected the length of messages (e.g. less than Twitter's 140-character limit) that can plausibly be distributed through any social media platform. The use of a fictitious activist group eliminated any possible bias that might arise from participants' pre-existing attitudes toward any real groups. Participants, all of whom reported having at least one personal social media account (e.g. Facebook, Twitter, etc.), were instructed to 'Picture the scenario that you have received this message online from [source]. You have received this message in any of your social media accounts (e.g. Twitter, Facebook, MySpace, etc.).'

Depending on the experimental condition, participants were told that the message had come from either: (1) their close personal network – 'someone to whom you are very close. The person can be a family member, friend, classmate, or anyone else you know.' (*n* = 102); (2) their distant social network – 'a person who is a friend of someone you know', and 'you may or may not personally know the person who passed the message to you' (*n* = 107); or (3) an organizational source –'an official from the group Students for Nature whom you do not know personally' (*n* = 106). These indications of personalness echo Parks's proposition (2007) that one feels closer and more connected to people with whom they have more contact. The broad definition of organizational source allowed participants to perceive organizational sources that could include leaders, spokespersons, task committees, and ordinary members (McCarthy & Wolfson, 1996). Participants who received the message from a close personal source were asked to write the name of one person to whom they were close to on the questionnaire, so as to create a more 'personalized' scenario and increase 'the believability of the situation' (e.g. Oshagan, 1996). In all three scenarios, participants were reminded in the post-test survey of the respective sources that had sent them the message (e.g. Sundar & Nass, 2001). Manipulation checks for the personalness of different message sources to participants were performed with a 3-item scale measuring closeness, intimacy, and frequency of contact (α = .96). One-way ANOVA results showed that reactions to the various sources were significantly different ($F(2, 312) = 257.66$, $p < .01$), with those exposed to a close personal network message source finding the source to be most personal (M = 6.53, SD = .98), followed by those from a distant social network (M = 3.62, SD = 1.83), and from organizations (M = 2.03, SD = 1.39). Bonferonni tests confirmed that the pairwise differences in *personal closeness* between the message sources remained at $p < .01$.

Measures

Online activities: On a 7-point Likert-type scale (1 = very unlikely, 7 = very likely) participants indicated the likelihood that they will, on any social media platform (e.g. Twitter, Facebook, etc.): (1) Post personal comments about the campaign; (2) Post personal comments about the

message; (3) Pass on the message that was received to others; (4) 'Like' the message that was received on Facebook; (5) Join the online group page for Students for Nature; (6) 'Like' or 'Follow' the online group page for Students for Nature on Facebook or Twitter; (7) Upload other materials (e.g. photos, videos, etc.) related to the campaign; and (8) Provide links to other information from the Internet that pertains to the campaign issue.

Offline activities: Participants indicated on a 7-point Likert-type scale (1 = very unlikely, 7 = very likely) their willingness to: (1) Join any public demonstrations organized by the group; (2) Speak about the campaign to other people you meet face-to-face; (3) Help distribute campaign materials to others (e.g. fliers, pens, badges, etc.); and (4) Use items related to the campaign in public (e.g. t-shirts, wristbands, badges, etc.).

Prior involvement in activist campaigns: Adapting measurements utilized by Bennett et al. (2008), participants indicated on a 12-point scale (0 = None, 12 = more than 10 times):

> As accurately as possible, the number of times you have participated in any campaign-related activities organized by any group(s) to create or prevent changes to law and society (e.g., signing petitions, giving donations, passing information to others, joining demonstrations, protests, and rallies, etc.) in the last 24 months (M = 3.69, SD = 2.75).

Personal issue involvement: On a 7-point Likert-type scale (1 = very little, 7 = very much), participants indicated their stance on the issue in general as well as specifically administered in the study (see Kim, 2009). Issue involvement – general: (1) 'To what extent do you feel that society should protect the natural environment (e.g. trees, rivers, lakes, etc.)?' and (2) 'How important is the issue pertaining to conservation of the natural environment to you?' Issue involvement – specific: 3) 'How important is the issue about parks being removed for other developments (e.g. buildings, roads, etc.) to you?' and (4) 'How strongly do you feel about the conservation of parks?' (α = .84, M = 5.14, SD = 1.14).

Perceived efficacy: The three different perceptions of perceived efficacy were collected on a 7-point scale (1 = strongly disagree, 7 = strongly agree). *Perceived self-efficacy* was measured with four statements that included 'I consider myself to be well qualified to participate in campaigns against university's administrators' and 'I feel that I can do as good a job contributing to campaigns against university administrators as most other people' (e.g. Jung, Kim, & de Zúñiga, 2011) (α = .89, M = 3.98, SD = 1.25). *Perceived technological efficacy* was measured by adapting Eastin and Larose's (2000) Internet self-efficacy scale to the present study's context with three statements that included 'I consider myself to be well qualified in using the Internet to participate in campaigns' and 'Taking part in Internet activities to support a campaign is easy to me' (α = .87, M = 4.99, SD = 1.2). Participants were informed that 'Campaigns refer to the collective activities organized by activist groups to create or prevent changes to law, economic, environment, and society.' *Perceived group efficacy* was measured by asking respondents to indicate their views on five statements: 'I feel that campaigns organized by student activist groups against university administrators: (1) are wise; (2) are beneficial; (3) are harmless; (4) will be able to create changes on campus; and (5) make it easier to achieve desired outcomes' (e.g. Boyle et al., 2006) (α = .88, M = 4.35, SD = 1.0).

Results

RQ1 and H1, respectively, investigated the relative willingness of people to perform the various collective activities (RQ1) and posited that individuals will be more willing to participate in online activities as compared to offline ones (H1). As shown in Table 1, among online activities, respondents were most likely to 'Like' the message received on Facebook (M = 5.23, SD = 1.65),

Table 1.   Ranked mean comparisons and correlation matrix of online and offline collective activities ($n = 315$).

	M	SD	Online activities								Offline activities			
			1	2	3	4	5	6	7	8	1	2	3	4
Online														
Act 1	5.23	1.65	1											
Act 2	5.12	1.66	.754	1										
Act 3	4.97	1.72	.608	.645	1									
Act 4	4.76	1.79	.716	.860	.655	1								
Act 5	4.79	1.70	.546	.562	.780	.540	1							
Act 6	4.49	1.75	.539	.538	.738	.543	.825	1						
Act 7	4.21	1.77	.542	.620	.680	.644	.685	.643	1					
Act 8	4.13	1.72	.527	.582	.635	.647	.633	.602	.892	1				
Offline														
Act 1	4.42	1.72	.521	.517	.571	.547	.570	.517	.532	.503	1			
Act 2	4.31	1.65	.361	.432	.517	.416	.496	.488	.462	.426	.660	1		
Act 3	3.97	1.69	.416	.482	.537	.509	.545	.581	.509	.561	.735	.680	1	
Act 4	3.82	1.56	.440	.508	.522	.483	.490	.510	.518	.523	.795	.658	.822	1

Notes: [*Online*] Act 1 = 'Like' the *message* received on Facebook; Act 2 = 'Like' or 'Follow' *online group* on Facebook or Twitter; Act 3 = Pass the message received to others; Act 4 = Join the activist group online page; Act 5 = Post personal comments *about the campaign*; Act 6 = Post personal comments on the *message* received; Act 7 = Provide links to other information pertaining to campaign; Act 8 = Upload materials related to campaign (e.g. photos, videos). [*Offline*] Act 1 = Use campaign-related items in public (e.g. t-shirts, wristbands); Act2 = Speak about the campaign to others face-to-face; Act 3 = Join public demonstrations on the campaign; Act 4 = distribute campaign materials offline (e.g. flyers, pens). All activities significantly correlated at $p < .01$ (two-tailed).

and least likely to upload materials ($M = 4.13$, SD = 1.72). In regard to offline activities, respondents were most likely to use campaign-related items in public ($M = 4.42$, SD = 1.72), and least likely to help distribute campaign materials ($M = 3.82$, SD = 1.56).

To assess differences between online and offline activities, exploratory factor analysis with oblimin rotation was performed. Results retrieved a two-factor solution at Kaiser–Meyer–Olkin sampling test = .910 and Bartlett's sphericity test at $\chi^2(66) = 3547.27$, $p < .001$, accounting for 73.08% of total variance. Table 2 shows the factor loadings from the pattern matrix after a seven-iteration 'direct oblimin' rotation with Kaiser normalization. Online activities consisted of the eight items indicating collective activities that are typically done on social media platforms (Cronbach's $\alpha = .93$, $M = 4.73$, SD = 1.73), and offline activities contained activities that are done in real-life settings ($\alpha = .91$, $M = 4.17$, SD = 1.51). Respondents' greater willingness to participate in online forms of collective activities as compared to offline ones was verified by results from paired-samples t-test, $t(314) = 8.62$, $p < .01$ (two-tailed). H1 was thus supported.

H2 posited that individuals' willingness to participate in collective action is significantly affected by the invitational source. One-way ANOVA results with combined mean of willingness to participate in all activities ($M = 4.54$, SD = 1.36) showed that respondents were most willing to participate in collective action when invited by those in their close personal network ($M = 5.31$, SD = 1.21), followed by their distant social network ($M = 4.44$, SD = 1.29), and then by organizational sources ($M = 3.91$, SD = 1.20) ($F[2, 312] = 33.7$, $p < .01$, $R^2 = .18$). H2a–H2c were thus supported.

RQ2 further asked whether willingness to participate in online and offline activities differed by the invitation source. MANOVA results (Wilk's $\lambda = .784$, $F[4, 622] = 20.12$, $p < .01$, $R^2 = .12$) showed that respondents were most willing to participate in *online activities* when invited by persons in their close personal network ($M = 5.43$, SD = 1.24), followed by their distant social network ($M = 4.58$, SD = 1.35), and organizational sources ($M = 4.18$, SD = 1.42) ($F[2, 312] = 23.42$, $p < .01$, $R^2 = .13$). The results corresponded with *offline activities* (close personal networks:

Table 2. Factor analysis online and offline activities ($n = 315$).

	Component	
	1	2
Online activities		
Post personal comments about the campaign online	.571	.333
Post personal comments on the message received	.510	.374
Pass the message received to others online	.676	
'Like' the message received on Facebook	.925	
Join the online group page belonging to the activist group	.925	
'Like' or 'Follow' the online group page on Facebook or Twitter	.914	
Upload other materials (e.g. photos, videos) related to campaign	.706	
Provide links to other information pertaining to campaign issue	.699	
Eigenvalue	7.56	
Variance (%)	62.96	
Offline activities		
Join any public demonstrations organized by the group		.897
Speak about the campaign to others face-to-face		.888
Distribute any campaign materials offline (e.g. flyers, pens)		.860
Use items related to campaign in public (e.g. t-shirts, wristbands, badges)		.750
Eigenvalue		1.21
Variance (%)		10.11

Note: Empty cells have factor loadings with absolute values less than .3.

Table 3.   MANCOVA results and pairwise source comparisons ($n = 315$).

	Online activities				Offline activities			
	B	SE	t	F	B	SE	t	F
Prior activism involvement	.048	.028	1.72	2.96	.034	.029	1.16	.246
Issue involvement	.158	.065	2.45	5.99*	.107	.067	1.56	.112
Self-efficacy	.022	.064	0.337	0.11	.077	.067	1.15	.253
Technological efficacy	.248	.064	3.85	14.8**	.095	.067	1.41	.160
Group efficacy	.114	.077	1.48	2.19	.122	.081	1.51	.132
Message source				25.8**				42.6**
Source comparisons	Mean diff.	SE	p		Mean diff.	SE	p	
Source A v. Source B	0.897	.179	.000		0.980	.187	.000	
Source A v. Source C	1.24	.177	.000		1.70	.185	.000	
Source B v. Source C	0.338	.177	.172		0.719	.185	.000	

Note: Source A = close personal network, Source B = distant social network, Source C = organizational source.
*$p < .01$.
**$p < .001$.

$M = 5.06$, SD = 1.37; distant social network: $M = 4.14$, SD = 1.46; organizational source: $M = 3.36$, SD = 1.21) ($F[2, 312] = 41.03$, $p < .01$, $R^2 = .21$). Post-hoc pairwise comparisons with Bonferonni tests, however, showed differences between all sources for both online and offline activities remained, except between distant social network and organizational source ($p = .09$) in influencing willingness to participate in online activities.

H3 posited direct relationships between individuals' personal involvement with activist campaigns, issue involvement, perceived self-efficacy, technological efficacy, and group efficacy and their willingness to participate in online activities. H4 posited similar direct relationships, less perceived technological efficacy, on offline activities. RQ3 asked whether the influence of source persists when these individual factors are accounted for. MANCOVA with covariate loadings for the individual factors and Bonferonni tests were performed to examine H3, H4, and RQ3.

As shown in Table 3, only H3a and H3d were supported (omnibus statistic online activities: $F[7, 307] = 13.15$, $p < .01$, $R^2 = .23$; offline activities: $F[7, 307] = 14.67$, $p < .01$, $R^2 = .25$): Personal issue involvement and perceived technological efficacy were both directly related to willingness to participate in online activities at $B = .16$, $p < .05$ and $B = .25$, $p < .01$, respectively. Additionally, as queried in RQ3, the influence of source persisted for both online ($F[2, 307] = 25.84$, $p < .01$) and offline activities ($F[2, 307] = 42.61$, $p < .01$) when individual factors were accounted for (Wilk's $\lambda = .772$, $F[4, 612] = 21.13$, $p < .01$), in the same manner as RQ2 findings. That is, respondents were most willing to participate in collective action when invited by those in their close personal network, followed by their distant social network, and then by organizational source (although distant social networks and organizational representatives do not significantly differ in their potential to influence individuals' willingness to participate in online activities, $p = .17$).

Discussion

Results of this study clarify the role of social networks in micro-mobilization of collective action on social media by showing that online social networks vary by their level of *personalness*, and that invitational acts by people in one's close personal networks (e.g. friends, family members) are most influential in motivating individual participation, followed by people belonging to more impersonal groups such as distant social networks (e.g. friends of friends) and, lastly, organizational sources. Consonant with the 'relational diffusion' process, this indicates that alternatives

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to formal and direct organizational communication might be more critical in rallying support for activism on social media (Bimber et al., 2012; Diani & McAdam, 2003). Indeed, social motives and reference group influences such as one's interest in connecting with others at a more personal level (Klandermans & Oegema, 1987), and the social approval and greater integration with one's personal cliques (e.g. friends, colleagues, family), may be a reason for, and benefit of, complying and engaging in shared goals (Cialdini & Trost, 1998; Glynn & Park, 1997). This may be especially true if the cause is endorsed and personally valued by people who are close and important to the target of action (Lim, 2012; Mercea, 2012).

The ability of close personal networks to trigger collective action via social media was found to persist, even above and beyond individual predispositions to participate in activism. From the viewpoint of individuals who are unaffiliated with a specific collective action cause, this suggests that one's personal cliques have the potential to mobilize new participants for activism via social media – bolstering prior findings that had largely involved individuals who were already aware of the cause, affiliated with the organizations, or had participated in collective efforts previously (e.g. Bimber et al., 2012; Fisher & Boekkooi, 2010; Lim, 2012; Maireder & Schwarzenegger, 2011; Tufekci & Wilson, 2012).

Notably, this study has disentangled the strong influence of personal networks from individual factors with results, indicating that personal issue involvement and perceived technological efficacy can directly influence one's willingness to participate in publicly expressive collective activities on social media. This adds another theoretical-individual premise to the communicative model for collective action (Bimber et al., 2005) and supplements the logic for online connective action (Bennett & Segerberg, 2012), by suggesting that individuals' affinity to the issue at hand and their capacity to take action via social media can enhance the potential of close personal networks to encourage people's willingness to express their support publicly.

By differentiating between one's willingness to participate in social media-based collective activities and offline activities, this study also provides novel findings on the potential of personal networks to activate collective action via social media. Results showed, for example, that activism activities can be differentiated into online and offline forms, with individuals being more likely to carry out the former. In many ways this is not surprising, considering that people likely anticipate greater risks in participating in more confrontational offline activities (e.g. demonstrations) as compared to the more persuasive and 'softer' ways of showing support via social media (Carty, 2010; Meikle, 2002; Postmes & Brunsting, 2002), which are also relatively easy to do and more convenient than offline activities (Van Laer & Van Aelst, 2010). Yet, individuals' willingness to carry out social media-based activities is also positively related to their willingness to engage in offline ones and triggering online participation can possibly serve as important 'entry points' for future campaign participation (Brunsting & Postmes, 2002, p. 550). These 'digital prefigurative' activities can thus help to create awareness and build a strong sense of collective identity that is vital in spurring participation in more affirmative forms of offline actions such as demonstrations and protests (Bakardjieva, 2012; Harlow & Harp, 2012; Mercea, 2012). Moreover, individuals' greater propensity to cross the 'private-public boundary' by carrying out publicly expressive collective acts online (Bimber et al., 2005), despite the perceived social and privacy costs associated with exposing their personal stance within their social circles, highlights the strategic importance of social media as part of a mobilization toolkit for activist movements, especially perhaps those that aim to involve students and youths.

Overall, then, results of this study suggest the value for activist groups and organizations to strategically build their digital repertoires to enhance 'prefigurative' campaign participation, and to gear these activities toward achieving the campaign's main goal. For instance, organizations may need to re-think the importance of carrying out activities such as disseminating campaign

materials offline (e.g. t-shirts, armbands), and emphasize instead creating impactful banners and images to be disseminated in the socially networked online environment. The strong influence of close personal networks to mobilize new participants via social media and the direct influence of personal issue involvement also point to the probable proliferation of grassroots activism. This is where socio-political movements and campaigns tend to be spontaneously initiated, and their communication anchored, on interconnected personal online networks at a local community level where volunteers, particularly initial ones, are part of the community (e.g. family, neighbors) or one's personal networks surrounding members of the community (e.g. friends, peers, colleagues) (Castells, 1983; Ekins, 1992; Varnelis, 2008). These implications suggested by the present findings offer possible directions for future research concerned with the role of social media technologies for collective action.

Limitations and future research suggestions

The present study's limitations may also help inform future research directions. Specifically, aspects of 'closeness' of a message source beyond those investigated in this study might inform the likelihood, nature, and dynamics of collective action participation. For instance, individuals may perceive 'closeness' in terms of how similar their attitudes and beliefs are to a source, or in terms of a shared sense of group identification. Furthermore, on social media, individuals can receive multiple messages with different content type and characteristics. Future research could therefore compare the influence of multiple messages with a variety of characteristics that are passed by different sources in online networks. This would help show, for example, whether message content characteristics (e.g. positive or negative appeals) interact with source closeness, which might also be mitigated by the specific type of actions requested or the type of collective action cause. In this regard, this study was premised on calls-to-action for a cause that people tend to generally think and behave positively toward (i.e. protecting the environment). However, more contentious, polarized, and morally loaded issues such as abortion, for example, may increase the resistance to publicly support the cause on social media despite, or because of, the source that invites them. Research is thus needed to clarify the underlying micro-mobilization mechanisms for collective action via social media with different message types, different issue types, and wider range of participant population.

Conclusion

Overall, this study provides new evidence on the success of *invitational acts* stemming from sources varying in their degree of *personalness* to influence uninitiated individuals to participate in collective action via social media. The influence of relevant individual factors and participation in online and offline activities were also examined. Results suggest mechanisms that are pivotal in contemporary micro-mobilization efforts, and demonstrate that highly personal calls to action are most effective, and that at least via social media distant social networks and organizational sources are roughly equivalent in their capacity to motivate participation. In addition, individuals distinguish clearly between the 'soft' activities typically required for online forms of activism and those offline that traditionally require greater commitment or effort, and suggest how these two forms might be melded when prefigurative participation is considered. Findings from this study thus highlight a number of important factors in mobilization efforts currently, which have profound implications as digital activism is increasingly a part of the sociopolitical landscape of the future.

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Disclosure statement

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