Calling All Facebook Friends: Exploring Requests for Help on Facebook

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Abstract

Past research suggests Facebook use is linked to perceptions of social capital, a concept that taps into the resources people gain from interactions with their social network. In this study, we examine a sample of public Facebook status updates (N=20,000) for instances in which users request a response from their network. These attempts to mobilize resources offer insight into the mechanisms through which Facebook is used for social capital conversion. After identifying mobilization requests (N=856), we categorize them by cost (i.e., effort needed to satisfy the request) and type (e.g., opinion, information, social coordination) in order to describe the prevalence of these requests and the extent to which they require effort on the part of the potential responders. Finally, we examine characteristics of these users and the linguistic characteristics of status updates that contain mobilization requests.

Introduction

Facebook, the most heavily used social network site (SNS) in the world, recently announced it supported one billion active monthly users (Facebook 2012). As of 2013, 67% of American Internet-using adults reported using a social network site, up from a mere 5% of adults in February 2005 (Rainie, Smith, and Duggan 2013), and 92% of SNS users had a Facebook account (Hampton et al. 2011). Researchers have documented positive relationships between Facebook use and self-reported perceptions of social capital, a sociological concept that captures the perceived and actual resources individuals accrue through interactions with their social network (Burke, Kraut, and Marlow 2011; Burke, Marlow, and Lento 2010; Ellison, Steinfield, and Lampe 2007, 2011; Ellison et al. in press). Research in this area has employed various measures of Facebook use, including self-reported time on site as well as more nuanced, socially relevant metrics, such as the

number of inbound messages from Friends (Burke et al. 2011) or the number of "actual" friends on the site one reports (Ellison et al. 2011). In these studies, measures of use have been positively associated with greater perceived access to resources such as social and emotional support or advice and information, as assessed by measures such as the Internet Social Capital Scales (Williams 2006).

One hallmark of social capital is that it can be converted into other forms of capital (Resnick 2001), yet naturally occurring episodes of social capital conversion "in the wild" are difficult for researchers to capture. This study examines one component of Facebook use we believe is a likely conduit of social capital conversation—*asking questions and making requests of one's network via Facebook status updates*. Recent SNS scholarship describes the ability to broadcast requests for information and social support as a possible mechanism through which social capital accrual occurs in SNSs (Gray et al. 2013). On the site, status updates enable users to share content directly with their entire network (or a subset thereof), and to make direct requests through use of text, images, links, or video; users' Friends can reply directly by commenting on the update or through other channels, both within the site or via other channels (e.g., phone calls, text messages).

This study explores one pathway through which social capital conversions are likely to occur: requests for some form of action on the part of the message recipient, distributed via the status update. We examine a sample of public Facebook status updates (N=20,000) for instances in which users are requesting some form of action or response from their network. These attempts to mobilize resources may provide insight into user practices and, more importantly, the mechanism through which users take advantage of the affordances of the site for social capital accrual and conversion. We explore the relative occurrence of these posts compared to non-mobilization posts across different levels of Facebook use, describe the different types (categories) of requests that are made, and explore the degree to which these requests seek substantive responses from their Friends. Finally, we use linguistic content analysis techniques to determine whether mobilization requests have different linguistic features than

other kinds of posts in order to gain insight into how users are framing their remarks and to better understand the mobilization process.

Social Network Sites and Social Capital

Broadly defined, a social network site is a "networked communication platform in which participants 1) have uniquely identifiable profiles that consist of user-supplied content, content provided by other users, and system-level data; 2) can publicly articulate connections that can be viewed and traversed by others; and 3) can consume, produce, and interact with streams of user-generated content" (Ellison and boyd 2013, p. 158). SNSs vary greatly in size and content, but the largest SNSs tend to focus on information sharing between users. The content itself is also highly variable, as users are not limited solely to text, but can share links to news stories, photos, videos, and other web content. Although in this paper we focus on Facebook, it is important to note that SNSs differ in many ways. For instance, Facebook networks generally include pre-existing connections (Hampton et al. 2012) and the majority of users maintain semi-closed networks such that only "Friends" can see their full profile information (Madden 2012), while sites like Twitter are characterized by a higher number of public profiles and larger networks of connections, many of whom users may not know outside of social media (Marwick and boyd 2011). Thus, patterns identified here may not apply to other SNSs.

Social capital is a theoretical framework that is often employed to study the outcomes of SNS use. It can be defined as "the aggregate of the actual or potential resources which are linked to possession of a durable network of … institutionalized relationships of mutual acquaintance and recognition" (Bourdieu 1985, p. 248). Social capital is similar to many other forms of capital, such as financial capital, but is distinguished by its focus on relationships between individuals. Through these relationships—and the interactions that constitute them—individuals may gain opportunities to obtain other forms of capital (Burt 1992) or convert social capital into other forms of capital (Resnick 2001), such as human capital. Past research on SNS use and social capital has explored two kinds of social capital: "bridging" and "bonding" (Putnam, 2000). Bridging social capital is associated with weaker ties that serve as connections between clusters of people and facilitate the exchange of novel information across networks, whereas bonding social capital speaks to the resources exchanged among closer ties, such as emotional support and physical aid.

Research applying the social capital framework to SNS use has largely focused on Facebook, most likely because the site has a large user base and is well-suited for relationship maintenance among individuals who already have a pre-existing offline relationship (Tong and Walther 2011); this differs from other online contexts that are typically used for connecting unknown others or forming new friendships (e.g., Meetup.org). Many of the studies in this area have established positive associations between specific uses of the site and perceptions of bridging social capital. For example, research by Burke et al. (2010) found positive correlations between users' total Facebook Friends and their perceived bridging social capital, while Ellison et al. (2011) found similar results when looking at a self-reported proxy of subjective tie strength ("actual friends").

Question-Asking on Facebook

Although typically associated with relationship maintenance (Ellison et al. in press; Tong and Walther 2011), SNSs like Facebook are gaining increasing attention as venues for information exchanges between individuals, ranging from the quotidian to the substantive. Although sites exist that enable users to pose questions to experts or to crowdsource information from the Internet at large (e.g., Yahoo! Answers, Quora), many opt to share questions with their existing social network via SNSs, and research suggests sites like Facebook are increasingly employed as "social search engines" because they enable people to target questions to those that know them. In a study of Microsoft employees, Morris, Teevan, and Panovich (2010a) compared the preference for and success of information seeking utilizing both search engines and directing questions to one's contacts on a SNS. They found that some respondents preferred asking questions on SNSs as opposed to search engines for reasons such as: the information need required responses that were tailored to the asker; the trust in the people answering the question was higher because they were known to the asker; the question could be framed in natural language; and the asker received secondary benefits like emotional support. In fact, the greater level of trust embedded within one's social network is one of the primary reasons users are likely to turn to SNSs—versus a search engine or question-asking site—for their information needs (Morris et al. 2010a, 2010b).

Past research on information exchange suggests that one's social contacts are valuable because they can provide relevant answers based on their knowledge of the information seeker. These benefits provide one possible explanation for why individuals may seek information from known contacts when information needs encircle day-to-day events (Savolainen 1995). Likewise, Johnson (2004) found that turning to known individuals to solve an informational need—as opposed to organizations or other media sources (e.g., newspapers)—resulted in more successful and satisfying outcomes. Thus, SNS networks are well-suited for information seeking because they often reflect linkages between people who know one another offline (Lampe, Ellison, and Steinfield 2006) and consist of both strong and weak ties (Gilbert and Karahalios 2009).

SNSs such as Facebook may help users harness the latent resources of their personal connections to get

questions answered and request other kinds of assistance, such as social and instrumental support, because they surface relevant information (Ellison et al. 2007; Vitak and Ellison 2013). On Facebook, status updates are presented to one's network via the News Feed, a "social awareness stream" that is an aggregated, filtered collection of network activity (see Naaman, Boase, and Lai 2010). This broadcasting feature, a key component of most SNSs, enables users to distribute content, including requests for informational or emotional support, to a potentially large audience with little effort. The status update feature is helpful when seeking information because it enables users to broadcast requests to a wide set of ties (or even strangers, in the "public" setting) through a single post, which is especially useful when one cannot identify the best person to fill a particular need.

Previous research has largely focused on explicit requests for information. Indeed, this need is supported by a range of sites specifically designed for asking questions, such as Quora and Yahoo! Answers. Although we are also interested in requests for information or help that appear in question form, in this study we consider all requests that may be associated with resource sharing and social capital conversion. Our interest here is not *question-asking* behavior but rather *mobilization* behavior more broadly construed. We investigate occurrences in which Facebook users seek to *mobilize* their network to help them in some way—not only in the context of providing information or answering questions but also requests for other kinds of help, such as a last-minute dog-sitter. This broader conceptualization is well aligned with our higher-level interest in social capital exchanges among Facebook ties.

Research on the extent to which individuals seek help via Facebook is still unfolding. Morris et al. (2010b) found that half of their sample of 624 Microsoft employees reported "having used their status messages to ask a question" (including a rhetorical question). Lampe et al. (2012) asked participants about the extent to which they agreed with statements such as "I use Facebook to get answers to specific questions"; responses were all below the midpoint. In addition to these survey-based studies, other work in this area has used participant-provided examples of actual question-asking behavior (Gray et al. 2013; Morris et al. 2010b) or has examined questions posed at the request of the researcher (Panovich, Miller, and Karger 2012). These methods shed light on what and how questions are asked, but neither these approaches nor self-reported survey data provide an objective assessment of what proportion of SNS content is in fact requests for help. In fact, recent research (Gray et al. 2013) found that, despite reporting a relatively high frequency of asking questions on Facebook, some users could not find an example when reviewing their posting history. Similarly, some of Morris et al. (2010b)'s participants who reported engaging in the behavior were unable to locate examples of question-asking within their post histories. As suggested by Morris et al. (2010b), who note that "objective log-based studies … are promising directions for future work" (p. 1746), we use behavioral data from the site in order to answer our first research question, which asks how often requests for help occur in Facebook status updates:

RQ1: What is the occurrence rate of mobilization requests among public status updates on Facebook?

Past research has examined the kinds of questions individuals ask on SNSs, identifying the types of questions asked (e.g., categories such as recommendations, opinions, invitations, and favors) as well as question topics like technology, entertainment, and "home and family" (Morris et al. 2010b). Morris et al. (2010b) examined examples of questions posted to Facebook and Twitter by their participants, with the most common categories of questions being recommendations (29%), opinions (22%), and factual knowledge (17%). Paul et al. (2011) examined 1.2 million tweets obtained from the Twitter Firehose and used Mechanical Turkers to code posts containing question marks. They found that the majority were rhetorical questions (42%), requests for factual knowledge (16%), and polls (15%).

Our second research question explores the distribution of requests using an adapted set of categories identified by Morris et al (2010b), with one important distinction. Because we are interested in instances in which users are attempting to mobilize, or activate, their network for help, we do not consider rhetorical questions in this work. Note the high incidence of rhetorical questions in Paul et al.'s (2011) corpus, highlighting the fact that not all questions constitute information or support requests; some are just attempts to initiate conversation, as found in Harper, Moy and Konstan's (2009) "conversational questions" and Morris et al.'s (2010b) rhetorical questions. We thus categorize requests as *social coordination, factual knowledge, opinion/polling, recommendation/suggestion,* and *favor/request for action.*

RQ2: What is the distribution of mobilization request categories in a sample of Facebook status updates?

Research has investigated the types and linguistic features of requests made on SNSs (Morris et al. 2010b; Teevan, Morris, and Panovich 2011). However, no empirical work describes the extent to which requests made via Facebook require minor or major effort on the part of the responders, which is relevant when considering different kinds of social capital associated with information or support exchanges (i.e., bridging vs. bonding). What are the costs associated with responding to various mobilization requests made via Facebook? Resnick (2001) argues that social capital is convertible to other forms of capital. Consequently, the favors Facebook users ask have embedded 'exchange rates' with other types of capital. For example, while asking for an opinion typically requires little time and effort, attending an offline activity requires more of both. The amount of effort required to satisfy a

request may impact who or what types of Friends can or will respond. Thus, we explore:

RQ3: What are the levels and distribution of effort requested in a sample of Facebook mobilization requests?

One unresolved issue in the literature involves the individuals who engage in Q&A on Facebook. Recent research has begun to identify user characteristics—such as cultural differences (Yang et al. 2011)—that significantly predict question-and-answer behavior on SNSs as well as factors that influence characteristics of responses to information-seeking activities in these social online contexts (Teevan et al. 2011). Morris et al. (2010b) found no significant gender differences across types of questions; however, they did find that invitation questions were more likely to be asked by younger participants, whereas older participants were more likely to ask for recommendations. Given that none of these studies cataloged behavioral and demographic data from server logs, we ask:

RQ4: What are the characteristics of Facebook users who post mobilization requests?

RQ5: What are the characteristics of Facebook users who make specific kinds of mobilization requests?

When posting a status update intended to elicit resources from their network, Facebook users are likely to consciously or subconsciously craft their text to that purpose. For instance, they may use words that target salient portions of their networks or thank people preemptively (Jung et al. 2013). Previous work has analyzed SNS messages for linguistic characteristics (Gilbert and Karahalios 2009; Naaman et al. 2010; Paul et al. 2011). Consequently, we are interested in the types of words that people use in crafting mobilization messages, and how those words might differ across the different types of mobilization requests.

RQ6: What are the linguistic characteristics of network mobilizations of different types?

Method

Our dataset consists of public status updates (N=20,000) analyzed in collaboration with Facebook, Inc. These status updates were all posted with the "Public" privacy setting, meaning they were visible to anyone with a Facebook account. Our corpus of status updates represents a random sample of posts, stratified to include more updates from less active as well as more active users, from two weeks spanning July and August 2012. The 20,000 status updates were attached to some basic information about the posters: self-reported age and gender, number of Facebook Friends at the time of posting, and an activity metric indicating how often each poster had visited Facebook in the last 28 days. The dataset did not include any identifying information such as user ID number, names, or photos. Our corpus of status updates was produced by users with a median age of 26.00 (M=14.94). The users were 53.3% female and visited the site an average of 21.47 days (median = 27 days) out of the 28 days preceding and including the day the corpus was compiled. Users had an

Request Type	*Functional definition*
	Examples (created for this paper based on observed patterns)
Recommendation & Social Connection	A subjective, open-ended request for suggestions, or, in the case of referrals/social connections, a request to be referred or introduced to a specific person.
	"What movie should I watch tonight?" "Can anyone recommend a good local plumber?"
Factual Knowledge	A question posed that assumes and expects a correct answer; objective as opposed to subjective.
	"Does anyone know where *Grease* is playing in town?" "What's the weather going to be like for the game tomorrow?"
Social Coordination, Invitation, & Offer	A search for others with similar agendas or motives or for company (an invitation), with an assumed goal of collaboration or meeting.
	"Who wants to get together after the conference for some drinks?" "Where should we meet before the concert Saturday?"
Favor/Request/ Collective Action	A request for help or action from one's network for any number of things, including physical assistance, needed items, or emotional support.
	"I need to get to the airport tomorrow morning and my car is on the fritz. Who can give me a ride pretty please?" "Can anyone loan me their copy of *Romeo and Juliet* this weekend? I need to read it for class."
Opinion/Poll	A request for an opinion to be given in reaction/response to a status update; a vote or a choice between two alternatives to be made; or a general solicitation of what people are doing.
	"What do people think of Proposition 4?" "Chicken pot pie or beef stew for dinner?"

Table 1: Mobilization Categories

average of 515.71 friends (median = 287). Due to the stratification weights used to sample public posts from users with various levels of activity, this sample does not reflect the population distribution of these characteristics. We removed a small number (less than 1 percent) of updates that were exact copies of one another and thus appeared to be produced by automated means.

Through an iterative analysis of these updates, we developed a coding scheme to identify status updates that were examples of a mobilization request, operationalized as a *request for action related to provisions of social, informational, or other forms of support or assistance*. We differentiated mobilization requests from status updates that followed a similar linguistic pattern but were conceptually different from true mobilization requests; these status updates were excluded if they met the following criteria: they a) did not include a request for any actual content or information, b) asked only for a response within Facebook itself, and c) were at face value unrelated to social capital processes (e.g., "Like my status," "Like my photo!"). If these requests were coupled with a request for more information or other action, they were included as mobilizations (e.g., "Like my status if you want to hang out tonight" was coded as a mobilization attempt). The status updates not considered mobilization attempts by these standards accounted for about 2.1% of the status updates in the sample (N=416) and were excluded from analysis. We then coded the mobilization updates into one of several types, adapting the categories from Morris et al.'s (2010b) question typology. Table 1 lists categories, definitions, and example status updates (which we created based on observed patterns) for each category.

We developed a coding scheme to distinguish between differing levels of effort required to fulfill the request. This cost-coding scheme provides information about another dimension of the favors being asked on Facebook, namely how much effort is being requested. The cost-coding scheme consisted of three levels, ranging from level one, which require no activity outside the Facebook environment (i.e., commenting on the original post or watching an embedded video), to level three indicating offline activity. We followed the techniques for content analysis described by Riffe, Lacy, and Fico (2005). See Table 2 for level definitions and rules.

After establishing the coding scheme, we trained two coders to apply it to the text of each status update. First, the coders identified whether the update constituted a mobilization request. Each of the researchers coded the same 2,000 status updates independently, and then discussed discrepant codes with the larger research group. This was done iteratively until the coders reached 90% agreement on the mobilization status of each update. After coding the 20,000 updates for the presence of a mobilization request, they coded the subset of mobilization requests for category and cost level. Coders reached 93% agreement on the cost code and 85% agreement on category. Coders then collaboratively decided on the remaining discrepancies, creating the final coded data set.

Finally, we analyzed the text of the status updates using the "Linguistic Inquiry and Word Count" (LIWC) text analysis program (Pennebaker, Francis, and Booth 2001). LIWC assesses the number of words in textual data and identifies the frequency of words in pre-defined dictionaries that capture linguistic dimensions that are mechanical (e.g., pronouns, tenses, numerals), mood-oriented (e.g., positive emotion, anxiety, anger), or related to topics (e.g., friends, family, social). These word dictionaries have been assessed for external validity (see Pennebaker et al. 2007). The LIWC output enabled us to compare status update content across the mobilization categories for differences in some of these linguistic dimensions. Table 3 displays the average number of words that appear in status updates in the different cost and category groups. An ANOVA shows no difference across

Cost Level	Definition	Criteria	Examples
1	A request within the Facebook News Feed environment, soliciting responses from actions such as reiterating information already known by responder, consuming content present in News Feed, or liking a status to actions such as re-posting content.	Requested action takes place within Facebook— interaction with the status update only, no actions required elsewhere on Facebook or off the site.	"Please re-post this status if you know someone affected by Breast Cancer!"
2	A request that requires the responder to go outside of the Facebook News Feed to another area of Facebook or other technology-mediated channel to search for a response, consume online content, or otherwise respond to a request.	Any mediated activity that requires moving to another channel or medium in response to the request – private message, Facebook app, email, text, phone call, another website.	"Please go to this link and vote for my dog Zoey to win best Halloween costume! [URL]" "Can someone text me the address for the softball game?"
3	A request that requires the responder to perform an offline/face-to-face action.	Offline/face-to-face action required.	"I need a ride to church this Sunday…anyone?"

Table 2: Cost Levels of Mobilization Requests. Examples were created for paper based on observed patterns.

Category	Average Words Per Status
Recommendation & Social Connection	19.81
Factual Knowledge	19.14
Social Coordination, Invitation, & Offer	17.72
Favor/Request/Collective Action	25.22
Opinion/Poll	20.54
Cost Level 1	23.38
Cost Level 2	19.53
Cost Level 3	17.90

Table 3: Word Count Analysis of Mobilization Status Updates of Different Categories and Costs

either the type or cost categories, (F[1, 856]=2.22, *n.s.*). LIWC provides multiple dictionaries to assess dimensions of updates (Pennebaker 2011); for this project we used "Social," as this dictionary includes words that might be related to activating a specific part of one's network to provide help; and both "Positive Emotion" and "Negative Emotion," as these categories includes emotion words that might be attached to favor requests in order to increase their salience to a network. We also included the "QMark" category (which looks for question marks) because although our research focus is broader than just explicit questions, we wanted to know whether question marks, which explicitly signal the desire for a response on the part of the message recipient, occurred more often in mobilization requests than in other kinds of messages.

Results

RQ1 examined the occurrence rate of mobilization requests among a random stratified sample of public status updates on Facebook. In our sample of 19,833 public status updates, mobilization requests accounted for 4.4% of all updates (N=856). However, this does not represent the general prevalence of mobilization requests because our stratified sampling approach oversampled posts from less active users to ensure they would be sufficiently represented in our analysis. Using a weighted average of the per-stratum rates to reverse the stratification, we estimate that, overall, mobilization requests constitute 4.03% of public status updates.

To address RQ2, we analyzed the status updates coded as mobilization requests to determine the frequency of each of the five primary categories of mobilization. As previously noted, categorization coding was not mutually exclusive; status updates sometimes included two or more types of requests, and these were coded for all relevant mobilization categories. Of the 856 mobilization requests, 406 (47.4%) were *favor requests*, 342 (40%) were *polls for opinions,* 71 (8.3%) were requests for *factual knowledge*, 61 (7%) were for purposes of *social coordination*, and 37 (4.3%) asked for *recommendations/suggestions*. RQ3 asked about the level of cost, or effort, associated with each mobilization request. The vast majority of requests were the lowest cost level, cost level 1 (N=595 [69.6%]), followed by cost level 2 (N=191 [22.3%]), and cost level 3 (N=69 [8.1%]).

To determine whether there were any differences between users who posted mobilization requests and those who did not (RQ4), we utilized a series of independent-samples t-tests and chi-square tests to test for differences in age, number of Friends, site use, and gender. Results indicated significant differences for number of Facebook Friends $t(18,561)=-2.920$, $p<.05$ and site use, $t(18,561)=2.991$, $p<.001$, but not for age. Among our sample of status updates, users who posted mobilization requests had more Facebook Friends ($M=578$, $SD=735$ vs. $M=506$, $SD=702$) and visited Facebook less frequently ($M=20.60$, $SD=8.93$ vs. $M=21.49$, $SD=8.49$) than those who posted non-mobilization updates. To identify gender differences between users who post mobilization vs. non-mobilization statuses, we utilized Cramer's phi correlation coefficient, which is designed to test the correlation between two dichotomous variables. Results show no significant correlation between poster gender and propensity to share mobilization requests, $r_c=-.013$, *n.s.*

Next, we explored user differences by mobilization type (RQ5). An analysis of variance (ANOVA) was used to examine the category differences. In order to avoid violating the assumption of independence, we restricted the analysis to mobilization requests that were coded into a single category of mobilization, lowering the number of mobilizations in our corpus from 856 to 790. The analysis revealed a significant effect of mobilization type for age, $F(4, 785)=3.278$, $p<.05$, but not for number of Facebook Friends or level of site use. Post-hoc comparisons using Tukey's procedure at $p<.05$ revealed that users who post social coordination requests ($M=24.09_a$, $SD=6.50$) were significantly younger than those who post factual knowledge requests ($M=34.10_b$, $SD=14.21$), recommendation/suggestions ($M=33.09_b$, $SD=13.28$), and polls for opinions ($M=32.78_b$, $SD=16.59$), whereas those who posted favor requests ($M=31.14_{ab}$, $SD=14.74$) did not significantly differ in age from those who posted requests for social coordination, recommendation/suggestions, factual knowledge, or opinion polls. Gender differences across the categories were tested utilizing chi-square, and no significant gender differences were found between categories, $\chi^2(4, N = 788)=8.70$, *n.s.*

We used LIWC analysis software to process our corpus of mobilization status updates in order to identify linguistic and word usage differences across the categories and costs of mobilization updates (RQ6). We found that mobilization

	LIWC Dictionaries			
Category	Social	Pos. Emo	Neg. Emo	Qmark
Mobilization	11.81	4.17	1.52	9.45
Non-Mobilization	8.92	6.13	2.51	1.68
ANOVA	*7.78****	*8.27****	*7.35****	*9.05****
Recommendation & Social Connection	8.78	4.73	1.75	11.73
Factual Knowledge	10.44	1.72	1.51	19.30
Social Coordination, Invitation, & Offer	13.53	2.88	1.30	18.09
Favor/Request/ Collective Action	10.51	4.73	1.75	1.42
Opinion/Poll	13.91	3.84	1.37	14.98
ANOVA	*6.64****	*4.36**	*.404*	*22.22****
Cost Level 1	12.77	4.29	1.61	12.32
Cost Level 2	8.63	4.06	1.62	0.81
Cost Level 3	12.63	3.33	0.63	8.64
ANOVA	*7.92****	*4.36***	*0.20*	*11.79***

Table 4: Mean Percentage of Words in Status Updates that Matched LIWC Dictionaries Across Categories and Costs.   ** p <.01; *** p < .001

updates have slightly more words on average than non-mobilization updates. (22.04 vs. 19.03); $F(1, 19,483)=2.02$, $p<.05$. Table 4 presents differences between mobilization and non-mobilization status updates in terms of the mean percentage of words used in the updates that matched our selected dictionaries.

Differences emerged when we compared the use of words across our mobilization categories, with one exception being the LIWC 'Friends' dictionary, where the words were used so infrequently across all status updates that there were no statistically significant differences across coding categories. This is likely because the words that make up the 'Friends' dictionary are words related to being friends (i.e., "buddy," "mate," "neighbor"), and these words may be used less when addressing a diverse group of friends, acquaintances, work colleagues, and family (as in the case of many Facebook networks). Each category was analyzed for differences using an ANOVA comparing the occurrence of words from the LIWC-defined dictionaries. Post-hoc tests were used to confirm individual differences between the categories.

When we examine analyses using LIWC's 'Social' dictionary, which includes many socially oriented words, mobilization status updates had a higher percentage of social words in general compared to non-mobilization status updates. We also found that both the social coordination and opinion mobilization categories included more social words than the other types of mobilization requests. This could be because they are more outward-facing mobilizations, inherently more concerned with people other than the poster. The major difference in number of social words by the cost category of the status update request is in level 2, in which there are fewer social words used than in other categories. It could be because this category leverages other interaction channels where the social words are more implied by the channel choice. For example, words like "IM" may function as a proxy for words that would normally signal tie strength.

Positive emotion words appeared at a higher rate in requests for favors and recommendations than in requests for factual knowledge or coordination. It could be that people are "priming" responses by setting a positive tone in their messages by using these words. Negative emotion words do not occur very differently between mobilizations and non-mobilizations, with no meaningful differences across types or costs of those requests. This could be further evidence of priming, or not wanting to set a negative tone, or it could be that the pressure to present a positive self-image on Facebook discourages users from using negative emotions words more generally. In both mobilization and non-mobilization posts, a lower percentage of negative words were used, compared to positive words. Unsurprisingly, mobilization updates were significantly more likely to include question marks than non-mobilization updates.

Recommendations and favors had fewer instances of question marks than the other categories, perhaps because they are strategically posed as statements (e.g., "I need a ride to the airport") or because the nature of the desired response is different from those in other categories (e.g., a favor may require an action through another channel, not a comment to the status update as might be suggested by a question mark). Question marks were much more likely to appear in cost categories 1 and 3. This may be because cost category 2 is more likely to include requests framed as statements ("Send me an email!") than the other categories.

Discussion

SNSs enable individuals to articulate a network of contacts and interact with this network for a variety of purposes such as passing time, connecting with extended friends or family, or receiving social support. Many Facebook-enabled social interactions support the accrual of social capital, such as sharing requests for and provisions of resources. Past work has identified a relationship between perceptions of social capital and Facebook use (Burke et al. 2010, 2011; Ellison et al. 2007). The findings presented here represent the first empirical work we are aware of that systematically examines public status updates on Facebook in order to describe the occurrence rate and characteristics of explicit requests for help. Our dataset, representing a

stratified random sample of public status updates to the site, enables us to look for patterns across a broad population and to perform granular analyses to identify relationships among variables that may not be possible with self-report survey data. This study considers one channel through which social capital is mobilized and provides solid empirical data about the incidence of requests for help made to one's network via status updates. In doing so, this study contributes to a "second wave" of scholarship that moves beyond identifying a relationship between social capital and Facebook use and instead interrogates how, with whom, and through what mechanism social capital processes unfold via Facebook use.

The present study examines the incidence, type, and degree of required effort associated with requests made via public Facebook status updates. We analyzed user characteristics to determine whether differences exist between those who posted mobilization statuses and those who did not. Additionally, LIWC analyses enabled us to determine whether different kinds of mobilization requests were associated with specific linguistic patterns. This exploration was data-driven in that we are not drawing from established theory to test predictions about mobilization patterns on the site. However, like Grudin and Poltrock (2012), we believe this work serves an important purpose in delineating the prevalence and variety of mobilization requests, given the nascent research in this area and its focus to date on self-report survey data, which, while valuable, may be subject to bias in estimating the prevalence of such behaviors in the wild.

As a proportion of all status updates in our sample, mobilization requests were relatively infrequent, with only 4.03% of public status updates constituting requests for assistance, information, or action of some kind. This work complements other research exploring question-asking in social media contexts such as Morris et al. (2010b)'s study, in which 50.6% of participants surveyed reported ever having used social media to ask their network a question. Our data enable us to quantify what proportion of status updates are in fact requests. Our approach differs from past work in several ways. While Paul et al. (2011) and Morris et al. (2010b) included rhetorical questions in their analyses, our study does not consider rhetorical questions or conversational requests to be examples of mobilization because they are not inherently seeking a solution to an information or support need. Additionally, our sample consists of *public* status updates, whereas lab-based studies that capture examples from participants likely include public and private postings.

Among the categories of requests we identified, favors were, by far, the most common request made. These requests seem to be well-suited to Facebook, especially when they are the kinds of low-level favors that can be completed by anyone in the network and do not require co-location. Recommendations, on the other hand, were the

least common mobilization category identified, perhaps because many recommendations require shared characteristics, such as co-location (e.g., for a good local restaurant), life stage (e.g., for a book for one's toddler), or professional (e.g., for a new knife for a professional chef). Of course, these kinds of requests—aimed at a specific sub-set of one's network—may be happening at higher rates behind closed doors, either in private posts or in posts sent only to a specific "list" (such as "Locals," "Parents," or "Chefs"). Future research using alternative data collection methods could explore the relationship between specific Facebook features and request type.

When examining patterns in how costly requests in our corpus were, we found the majority of requests required the least effort to fulfill (i.e., cost level 1); this is unsurprising in that these requests could be performed by almost anyone and were thus good candidates for publicly broadcasted queries. The least common requests were those that asked one's network to perform some kind of offline activity (cost level 3). There are several potential reasons for this finding. First, distance matters: meeting these needs was most likely limited to those within geographic proximity of the requester. Second, relational quality impacts the likelihood of responding to such a request. As captured in the concept of bonding social capital (Putnam, 2000), favors such as those categorized at cost level 3 demand a significant investment in time and energy, and thus are more likely to be fulfilled by stronger ties. Furthermore, these ties are typically connected through multiple channels (Haythornthwaite 2005), which may lead individuals to pose "costlier" requests directly to those who they believe can fulfill them (e.g., through a text message or phone call as opposed to a status update). Finally, directed messages (as opposed to public broadcasts) may be employed for higher cost requests in order to increase feelings of accountability on the part of the recipient, or to tap into relational or contextual factors that might increase the likelihood of the request being completed. In fact, Burke et al. (2011) found that directed communication on the site was positively associated with bridging social capital, while broadcasted communication and passive consumption of others' posts were not. Future research could tap into additional dimensions of cost not captured in this work, such as psychological effort, self-presentational benefits, or opportunity costs.

Users who posted status updates requesting resources differed in several ways from those who did not. For example, we found those posting mobilization requests had significantly more Facebook Friends and visited the site less often as compared to those who posted non-mobilization requests. It may be that users with more Facebook Friends are more likely to utilize their vast online networks for help with various needs. These users may be visiting the site specifically to ask questions or address specific mobilization needs; thus, we see a higher rate of these requests for these less active users.

Finally, we examined the characteristics of users represented in our sample by the type of mobilization requested. We found users who posted social coordination requests were significantly younger than those who posted factual knowledge requests, recommendation/suggestions, and polls for opinions, whereas favor requests did not significantly differ from either social coordination requests, polls for opinion, recommendation/suggestions, or factual knowledge requests. The link between younger users and social coordination questions is consistent with Morris et al.'s (2010b) finding that younger participants are more likely to ask invitation questions. Younger Facebook users, who may have more opportunities to socialize because they have fewer family, employment, and childcare constraints, may be using the site for this purpose more than older users because more of their network is represented on the site, enabling them to take advantage of the lower coordination costs around planning events. Future work should explore norms around public requests and the extent to which individuals differ in their assessment of the appropriateness of this behavior in general and in a public setting such as Facebook status updates. Recent research suggests that many users do not think Facebook is an appropriate place for making requests for advice, opinions, and favors (e.g., Lampe et al. 2012), but rather see the site as a purely social space.

We found several differences in the types of words used in mobilization and non-mobilization status updates, as well as between the categories of mobilization updates. While total number of words used was only slightly different across the types of mobilization updates we analyzed, there were more striking differences in how people used words in the more specific mobilization categories we analyzed. The overall lesson from the pattern of differences in word choices is that people are using different strategies, either consciously or subconsciously, in order to elicit responses from their network. This choice may be shaped by norms around asking for help and the perceived efficacy of different types of messages, among other social processes. Future qualitative work should engage with users in "talk aloud" scenarios that surface their understanding of how word choice in status updates may influence the success of their mobilization requests.

The generalizability of our findings is limited by our use of public status updates, which prevents us from considering mobilization requests through private channels (e.g., Messages), Facebook Groups, and status updates distributed only to one's network or a subset of that network. It may be that if private posts and messages were considered, the incidence rate would be higher. Research has shown positive correlations between users' privacy and disclosure behaviors in both their profile information (Stutzman, Capra, and Thompson 2011) and through more public disclosure habits (Stutzman et al. 2012). Future work should apply our coding scheme to a corpus of private status updates to determine if differences in the incidence of mobilization requests emerge between public and private status updates. From a social capital perspective, it makes sense that the actual incidence of requests would be a small portion of the total traffic on the site, in that individuals no doubt regulate the extent to which they ask for favors from their network in order to avoid being seen as too "needy" (see, for example, Vitak and Ellison 2013). Also, asking a question in a public channel increases one's social vulnerability, in that a question with hundreds of viewers but no responses is face-threatening and potentially damaging to one's self-esteem and self-presentational goals.

In conclusion, this work reveals patterns of use that may shed insight into the ways SNSs such as Facebook are reshaping our access to social capital—the informational and social support resources held by those in our social network. Although mobilization requests constituted less than 5% of status updates in our sample, this represents millions of mobilization updates across Facebook's global user base. As noted by Smock et al. (2011), Facebook and other "masspersonal" SNSs are blurring the lines between mass communication and interpersonal communication. Using the site for purposes of requesting information, soliciting help or advice, or finding those willing to help with small favors may be an activity that takes advantage of the most powerful elements of each of these forms of communication. Facebook offers users the ability to broadcast requests, akin to the mass communication channels previously available only to the rich and powerful, but embeds these requests within a network of interpersonal relationships: a rich social context that compels us to attend to—and hopefully meet—these needs.

Acknowledgements

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