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Organizations' Dialogic Social Media Use and Stakeholder Engagement: Stakeholder Targeting and Message Framing

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Guided by the dialogic communication framework, stakeholder theory, and research on implicit framing, this study examines how stakeholder engagement reflects organizations' dialogic social media use in the form of stakeholder targeting and message framing. Analysis of survey data from 156 humanitarian organizations and semantic network analysis of their messages on Facebook and Twitter reveal that organizations with higher levels of dialogic social media use target relatively distinctive stakeholders. More dialogic organizations explore more diverse concepts in their posts, but the themes of discussion on Twitter and Facebook both diverge and converge regardless of levels of dialogic social media use. Moreover, the semantic differences among the organizations in the low- and high-dialogic groups are more salient on Twitter than on Facebook. Theoretical contributions and practical implications are drawn from the findings.

Keywords: social media, dialogic communication, stakeholder engagement, framing, semantic network analysis, humanitarian organizations

Social media (e.g., Facebook, Twitter) offers unprecedented opportunities for organizations to create and share content, an essential element in stakeholder engagement, relationship building, and dialogic communication (Valentini, 2015). However, research has shown that organizations generally use social media for one-way communication rather than for dialogue (e.g., Bortree & Seltzer, 2009; Svensson, Mahoney, & Hambrick, 2015). These studies generally use content analyses and focus on analyzing organizations' use of specific features or types of posts on social media to determine varied levels of dialogic

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employment (see a review in Ao & Huang, 2019). Less attention has been paid to the connection between employment of dialogic principles and the characteristics of relationships with stakeholders (see a review in Wirtz & Zimbres, 2018). Thus, little is known about how organizations' dialogic social media use aligns with the ways they communicate and engage with stakeholders, which are key to relationship building (Taylor & Kent, 2014).

To address this gap, this study examines how organizations with varied levels of dialogic social media use differ in stakeholder engagement. Specifically, we consider stakeholder engagement through stakeholder targeting and message framing. Stakeholder targeting refers to the communicative practice of engaging with particular groups of stakeholders (Saxton & Guo, 2012, 2014); message framing describes the message strategies in influencing stakeholders by raising the salience of certain facets of issues (Schultz, Kleinnijenhuis, Oegema, Utz, & Van Atteveldt, 2012). In studying organizations' stakeholder targeting and message framing, this research integrates the relational and rhetorical approaches in dialogic communication research (Kent & Taylor, 2018; Wirtz & Zimbres, 2018).

We conducted an online survey and semantic network analysis of 156 humanitarian organizations' messages on Facebook and Twitter over a one-year period. Thus, we contribute to the research on the organizational use of social media in three ways. First, although existing research relies on content analysis in determining organizations' employment of dialogic principles (e.g., Rybalko & Seltzer, 2010; Wang & Yang, 2020), this study retrieves organizations' self-perceived dialogic social media use and its association with the ways these organizations communicate with stakeholders on social media. This has the potential to enhance our knowledge of the mechanisms underlying organizations' stakeholder engagement strategies (Navarro, Moreno, & Zerfass, 2018).

Second, most prior research focuses on the structural implementation of dialogic principles, failing to consider how organizations perceive the characteristics of their relationships with specific stakeholders (Ao & Huang, 2019; Wirtz & Zimbres, 2018). Enriching the dialogic communication framework with stakeholder theory, this study offers insights into the ways in which organizations' perceived dialogic social media use links to the types of stakeholders they target in social media communication.

Third, by analyzing the semantic patterns that emerge from organizations' social media posts, this study enriches our understanding of how dialogic social media use is associated with the framing strategies that organizations employ in communicating with stakeholders. This approach goes to the core of the theorization of dialogic communication, encompassing rhetoric and persuasion (Kent & Taylor, 2018). It also highlights the importance of studying framing strategies by employing a network perspective of considering other relevant actors (Raupp, 2019).

The next section reviews the theories this study draws on—dialogic communication framework, stakeholder theory, and implicit framing—and develops research questions (RQs). We then describe the procedures of data collection, present the results, and discuss the theoretical and practical implications of our findings.

Literature Review

Kent and Taylor (1998) proposed the dialogic communication framework, which focuses on five principles to facilitate dialogic communication and relationship building through websites. These are dialogic loop, conservation of visitors, generation of return visits, ease of interface, and usefulness of information. Kent and Taylor (2002) later explicated different underlying principles of a dialogic orientation, such as recognition of the mutually dependent organization–public relationships and the creation of the atmosphere of trust and support. In sum, the dialogic communication framework highlights the ways in which organizations employ dialogic principles through the use of Internet technologies and interact with their stakeholders in ethical and honest fashions, which includes responding to stakeholder needs (Kent, Taylor, & White, 2003).

The dialogic communication framework has been used extensively to examine whether and the extent to which organizations use social media's interactive features to communicate with stakeholders. Research in this vein has examined organizations' social media profiles or message features (e.g., post frequency, provision of information, feedback seeking, use of @mentions, replies), finding that organizations exhibit varying levels of dialogic employment (e.g., Rybalko & Seltzer, 2010; Waters & Jamal, 2011) or engage in different forms of dialogic communication (Jahng & Lee, 2018; Men, Tsai, Chen, & Ji, 2018). Dialogic implementation may further facilitate organization–public engagement (e.g., number of likes and retweets; Wang & Yang, 2020).

This research has provided an informative picture of organizational social media adoption and use for dialogic communication, but generally equates the implementation of the dialogic principles through the features of social media as dialogue, overlooking the relational aspects of dialogic communication (Wirtz & Zimbres, 2018; see du Plessis, 2018, for an exception). It has also equated organizations' use of interactive features on social media with stakeholder engagement (Saxton & Guo, 2014; Taylor & Kent, 2014). To address the resulting gaps in our knowledge, we seek theoretical reasoning to further unpack organizations' dialogic social media use and stakeholder engagement by using stakeholder theory.

Stakeholder Targeting

Stakeholder theory focuses on the relationship between organizations and their environment (Donaldson & Preston, 1995). It suggests that organizations may prioritize their attention to specific stakeholders based on their salience (Mitchell, Agle, & Wood, 1997), strategically determining whom to talk to and how (Friedman & Miles, 2002). Mitchell and colleagues (1997) proposed a typology of stakeholder identification and salience that classifies stakeholders based on their power, legitimacy, and urgency. For example, only definitive stakeholders (e.g., shareholders, donors) hold all three attributes.

Building on the premises of the dialogic communication framework to address stakeholder needs (Taylor & Kent, 2014) and the stakeholder theory (Mitchell et al., 1997), we argue that organizations' dialogic social media use reflects the consideration of stakeholder targeting—that is, engaging with particular stakeholder groups (Saxton & Guo, 2012, 2014). Organizations are likely to dialogue with salient stakeholders (Uysal, 2018). Yet, empirically, studies have only examined whether organizations provide

information to a few broad categories of stakeholders (e.g., media, public, donors) as part of organizations' efforts for dialogic employment of social media (e.g., D. Kim, Chun, Kwak, & Nam, 2014). Meanwhile, relatively few studies have used the similar content analysis approach to identify organizations' stakeholder targeting through either the inherent feature of social media (use of @mentions to indicate speaking to specific users on Twitter; W. Liu & Xu, 2019; Rybalko & Seltzer, 2010) or the provision of relevant information to particular stakeholders in their messages on social media (Saxton & Guo, 2014).

Ultimately, research has not addressed how broader categories of stakeholder targeting reflect dialogic social media use or the role of organizations' perceptions in such targeting and use. Understanding how organizations evaluate their dialogic orientation and target stakeholders in their social media communication is valuable for understanding how organizations make sense of the stakeholder environment (Lane, 2018), which is at the heart of theorization of stakeholder engagement (Mitchell et al., 1997). Because of the lack of research addressing the link between dialogic social media use and stakeholder targeting, especially as perceived by organizations, we ask the following:

RQ1: How does organizations' perceived dialogic social media use relate to the types of stakeholders they target on social media?

Framing and Semantic Networks

Dialogue is characterized by rhetoric and persuasion because every interaction involves the potential to influence and be influenced by others (Kent & Taylor, 2018). The study of language use and discourse by organizations on social media presents an important way to theorize organizations' relationship management and dialogic communication (Valentini, Romenti, & Kruckeberg, 2016) because it influences the way stakeholders think about the issues or messages that organizations communicate with stakeholders (O'Connor & Shumate, 2018). Specifically, examining the discourse engaged in by organizations working in similar domains offers insights into the ways organizations formulate the public discourse about a topic (Fu & Zhang, 2019; Raupp, 2019) or communicate with stakeholders (W. Liu, Lai, & Xu, 2018). Use of shared words or concepts by organizations and/or social media users indicate the co-creation process of raising the salience of certain issues (Xiong, Cho, & Boatwright, 2019), whereas the use of different words or concepts signifies their differential concerns and strategies in discussing an issue (J. H. Kim, 2012).

Research has employed semantic network analysis to uncover the discourse organizations employ and associated such analysis with implicit framing (e.g., Schultz et al., 2012). Rather than through the application of priori framing categories (B. F. Liu & Kim, 2011), implicit frames are revealed through analysis of word co-occurrences within a set of texts contributed by various actors (Hellsten, Dawson, & Leydesdorff, 2010). This allows for a systematic understanding of the relationships in which organizational messages are embedded (Yang & Saffer, 2019). However, existing works on implicit framing tend to focus on a single social media platform and a particular crisis situation (e.g., Gerken, Van der Land, & van der Meer, 2016; van der Meer, 2014), without broaching the framing strategies organizations generally employ. Following organizations' semantic patterns in their messages over time better reveals the development of implicit frames (Hellsten et al., 2010), providing insight into organizations' strategies to formulate public discourse or communicate with stakeholders.

This study uses semantic network analysis to identify the semantic patterns of the discourse contributed by organizations working in a particular domain—humanitarian relief and development—by examining the frequency and co-occurrences of the concepts as well as the emerging themes in their social media posts over time. More importantly, we argue that examining how organizations' perceived dialogic social media use relates to the semantic networks constructed through their social media posts provides an opportunity to enrich the rhetorical approach to dialogue (Kent & Taylor, 2018). As such, we ask the following:

RQ2: How does organizations' perceived dialogic social media use relate to the semantic networks (i.e., frequency of concepts, the association among concepts, emerging themes) constructed from their social media posts?

Method

Sample

The purpose of this study is to understand how organizations' stakeholder engagement reflects dialogic social media use in the form of stakeholder targeting and message framing. We focused on humanitarian relief and development organizations because they deal with various stakeholders and broader scales of human and natural crises on a long-term basis (Lindenberg & Dobel, 1999). This approach is distinct from previous research that has examined single organizational crises (e.g., van der Meer, 2014). The primary sampling frame was the directory of the Global Network of Civil Society Organizations for Disaster Reduction (GNDR).

Survey Procedure

As part of the funded project by the first author's affiliated institution, we worked with Research Now (now known as Dynata), a global company that assists with market research, between July 11 and August 5, 2016, to telephone the 452 organizations listed in the GNDR directory and invite them to participate in our survey. We also contacted the organizations that provide services on environment protection and development via Research Now's partners. On our behalf, Research Now made more than 5,000 phone calls to reach the receptionists of these organizations spanning multiple continents, and 700 people responded to the phone call (response rate = 14%). Our invitation specified our preference to hear from those who determine social media policy within each organization; this included multiple people from a single organization in some cases. Given the possible variation in social media adoption among the organizations, we defined social media policy and implementation broadly to refer to organizations' use of information and communication technologies for external communication.

Ultimately 357 individuals responded to our survey, representing 156 organizations based in Japan (n = 49; 31.41%), United States (n = 47; 30.13%), United Kingdom (n = 25; 16.03%), Philippines (n = 12; 7.69%), Singapore (n = 9; 5.77%), Switzerland (n = 6; 3.85%), Australia (n = 5; 3.21%), and Germany (n = 3; 1.92%). Respondents' average tenure at their organization was 4.06 years (SD = 2.58). This

suggests that participants had good knowledge of their organization's social media use and communication strategies. Among the 156 organizations, 144 (92.31%) had used social media (e.g., Facebook, Twitter).

Given that we had multiple respondents from each organization, we computed the mean percentage agreement to assess the level of agreement among multiple respondents from the same organization about the same question. The average percentage agreement was 85.87%, which was higher than the standard employed in past research (e.g., Kotha, Dunbar, & Bird, 1995; Shortell & Zajac, 1990). This high percentage agreement supports our use of the mean scores for each organization in the analysis.

Survey Measures

Dialogic Social Media Use

Following the literature of dialogic communication (Bortree & Seltzer, 2009; Rybalko & Seltzer, 2010), in particular, the dialogic principles of conservation of visitors and dialogic loop (Kent & Taylor, 1998), we asked organizations to rate the following five activities across all the social media platforms they use on a 5-point scale (1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, 5 = *always*; α = .706, *M* = 4.02, *SD* = 0.42): "post general information or status updates," "post information in response to user inquiries," "users post on your organization's social media wall/page," "users post in response to inquiries by your organization or others," and "the number of the organization's friends/fans/followers increases." We split the sample into two groups based on the average scores, representing lower (*n* = 75, *M* = 3.69, *SD* = .27) and higher (*n* = 69, *M* = 4.37, *SD* = 0.22) levels of dialogic social media use, and *t*-tests suggested the two groups had significantly different levels of dialogic social media use ($t = 16.28$, $df = 142$, $p < .001$). However, there was no significant association between country and levels of dialogic social media use ($x^2 = 13.57$, $df = 7$, $p = .06$). Japan and the United States had the organizations with the highest levels of perceived dialogic social media use (4.00); the United States (3.13 and 3.00) and Australia (3.10) had those with the lowest levels.

Stakeholder targeting on social media was developed based on existing research on the typology of stakeholders, especially in the context of environment protection and development operations (Brown & Moore, 2001; Friedman & Miles, 2002). The categories of abstract audience and fans/followers were added because they represent unique stakeholder groups on social media (Litt & Hargittai, 2016). We asked respondents to indicate how often they write their social media posts targeting 11 types of stakeholders on a 5-point scale (1 = *never*, 2 = *sometimes*, 3 = *about half the time*, 4 = *most of the time*, 5 = *always*). The stakeholder types were (1) abstract audience, (2) other nonprofit organizations providing similar services, (3) news organizations, (4) other nonprofit organizations providing different services, (5) volunteers, (6) general members of the community, (7) donors, (8) companies/firms, (9) public agencies, (10) citizen-based groups, and (11) fans/followers of the social media account. We used cluster analysis to answer RQ1 by identifying the groups of stakeholders that organizations target on social media.

Semantic Data of Organizational Social Media Messages

In addition to the survey data, we used Python (Python-Twitter, Facebook-SDK) to scrape responding organizations' social media data for January 1 to December 31, 2016. Each organization's data

were broken into four time points with three months as intervals (Q1–Q4). Excluding those organizations with inactive profiles, Facebook data for the variable of dialogic social media use placed 73 organizations (N_{posts} = 21,127; M_{posts} = 289.41; *SD* = 210.65) in the low-dialogic group and 66 in the high-dialogic group (N_{posts} = 19,974; M_{posts} = 302.64; *SD* = 320.43). The Twitter data identified 64 (N_{posts} = 59,466; M_{posts} = 929.16; *SD* = 1,007.19) and 56 (N_{posts} = 77,092; M_{posts} = 1,376.64; *SD* = 1,835.78) in the low- and high-dialogic groups, respectively.

In answering RQ2, we conducted semantic network analysis on organizations' posts on Facebook and Twitter via Leximancer. Used in areas such as discourse analysis (Rooney, 2005), Leximancer identifies the presence and frequency of concepts by extracting a thesaurus of terms that characterize each concept. For example, the concept "risk" may contain the words "risk," "cost," and "threat" because they occur together throughout the text corpus. The presence of a concept in a sentence is determined by the number of appearances of words/phrases relevant to the concept. We removed stop words: articles, prepositions, and conjunctions. A list of the most frequently used concepts (i.e., many text segments are coded with the concept) that occurred at least 10 times was produced along with a co-occurrence matrix. The co-occurrence matrix indicates the association among concepts in the text. The value in each cell of the matrix refers to the number of times two concepts appear together in a text segment (i.e., two sentences per segment).

The four co-occurrence matrices (129*129, 141*141, 126*126, 122*122) were generated, representing the semantic network structures of the four groups of organizational texts (low- and high-dialogic groups on Facebook and Twitter, respectively). The numbers (129, 141, 126, 122) refer to the number of concepts in each data set. The calculation of degree centrality, density, and centralization was then performed in UCINET network analysis software (Borgatti, Everett, & Freeman, 2002). Higher degree centrality means that the concept co-occurs frequently with many other concepts in the text, thus indicating popular concepts. In semantic networks, density refers to the level of actual connectivity among concepts relative to the potential connectivity. The denser the semantic network, the more concepts are connected to each other (appear together) in the text. At the network level, centralization is the measure of the distribution of degree among the concepts. A semantic network with a higher level of centralization has a few highly connected concepts with high degree centrality (or popularity) and other concepts on the periphery. In contrast, a less centralized network is presented with concepts that are relatively equally popular.

In identifying the emerging themes, we used the clustering feature of Leximancer, which creates thematic clusters based on the analysis of the co-occurring patterns among concepts (Smith & Humphreys, 2006). In the graph, colored circles represent different clusters, and gray dots indicate the concepts defining each cluster. Leximancer also allows for comparing texts representing different attributes by tagging analyzed texts across folders or files. In our analysis, organizations' tweets and Facebook posts in each quarter (Q1–Q4) are placed in a folder, and the results are presented in ways that compare organizations' semantic network structures of tweets and posts across four quarters. To avoid overcrowding the graph, the links between each quarter tag and the connecting concepts are partially displayed.

Results

RQ1: Cluster Analysis

Research Question 1 asked how organizations' perceived dialogic social media use relates to the types of stakeholders they target on social media. We used hierarchical cluster analysis with squared Euclidean distances as the similarity measure and the average-linkage between-groups method as the clustering algorithm. The optimal number of clusters was determined by the scree plot (number of clusters charted against distance coefficients), between-cluster dissimilarity ratios (separation between clusters), and theoretical considerations (Flanagin & Metzger, 2001). For the low-dialogic group, the scree plot leveled off after two or four clusters, indicating these are the points to stop combining clusters. In the agglomeration schedule, the greatest dissimilarity ratio was between Clusters 3 and 4 (ratio: 1.14), followed by between Clusters 1 and 2 (ratio: 1.06). These two criteria, combined with the consideration of theoretical relevance of each of the clusters, indicated that four clusters were the optimal solution because it captured the variance among clusters. Cluster 1 had two types of entities: abstract audience and volunteers. Cluster 2 also had two types: other nonprofit organizations providing similar services and news organizations. Cluster 3 contained donors and other nonprofit organizations providing different services. Cluster 4 had the remaining five types of entities: general members of the community, companies and firms, public agencies, citizen-based groups, and fans/followers of organizations' social media account.

For the high-dialogic group, the scree plot leveled off after three clusters. The greatest dissimilarity ratio was between Clusters 1 and 2 (ratio: 1.12), followed by between Clusters 2 and 3 (ratio: 1.10). Given these results, a three-cluster solution was determined to best describe the data. Cluster 1 had eight types of entities: abstract audience, donors, volunteers, general members of the community, companies and firms, public agencies, citizen-based groups, and other nonprofit organizations providing different services. Cluster 2 had nonprofit organizations providing similar services and news organizations. Cluster 3 contained fans/followers of organizations' social media account. In sum, compared with the less dialogic organizations targeting more diffused stakeholders with disparate interests, more dialogic organizations had more distinctive stakeholders. They could be more easily identified as three categories of stakeholders with whom organizations invest efforts for the acquisition of resources (Cluster 1), information (Cluster 2), and online support (Cluster 3).

RQ2: Semantic Network Analysis

In answering RQ2, we present our results in four parts: frequently occurring concepts, co-occurring concepts, thematic clusters, and the evolution of the networks.

Frequently Occurring Concepts

The analysis of the Facebook data revealed that among the 176 most frequently occurring concepts, low- and high-dialogic groups of organizations had 94 in common, with each having 35 and 47 unique concepts, respectively (see Table 1 and Figure 1).

Table 1. Frequently Occurring Concepts in Organizations' Facebook Posts.

Common concepts	Low-dialogic group	High-dialogic group	Unique concepts	Low-dialogic group	Unique concepts	High-dialogic group
people	2,249	2,041	Syria	650	use	502
work	1,750	1,376	mental	439	pray	472
support	1,602	1,225	making	353	continue	350
communities	1,495	1,156	Haiti	339	old	318
need	1,535	1,079	development	332	protect	292
families	1,758	846	supplies	297	bring	282
lives	1,444	1,157	village	278	peace	280
world	1,300	1,208	kids	264	oil	279
water	1,337	779	meet	262	poor	261
refugees	1,401	555	areas	241	donate	242
children	1,873	75	forced	241	social	238
drinking	1,153	664	flooding	223	care	237
join	823	906	hunger	220	church	231
home	917	550	sanitation	215	heart	228
country	742	710	assistance	209	amazing	215
time	693	754	shelter	205	active	213
provide	826	617	Nepal	201	video	213
change	710	710	students	201	public	207
share	749	666	medical	194	clean	201
team	864	485	Uganda	192	justice	201

Note. Only the 20 most frequently occurring concepts are presented. The number in the table represents the frequency.

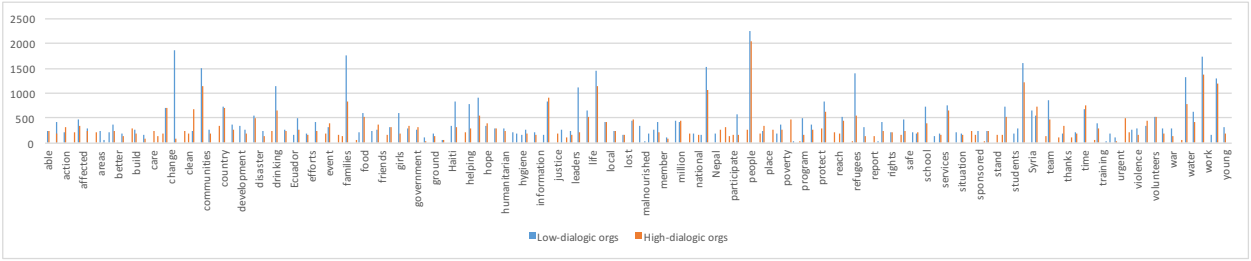

Figure 1. Frequently occurring concepts in organizations' Facebook posts.

Because of the skewed distribution of the concepts, we used the nonparametric Mann–Whitney *U* test to compare the differences between low- and high-dialogic groups. The results showed no significant differences between two groups in terms of the rank orders of the common concepts (U = 4,114; $p > .10$). This suggests that both groups of organizations used the concepts they had in common with similar frequency in communicating with their stakeholders on Facebook. As for concepts they did not have in common, the top 10 unique concepts for the low-dialogic group were "Syria," "mental," "making," "Haiti,"

"development," "supplies," "village," "kids," "meet," and "areas," and the top 10 unique concepts for the high-dialogic group were "use," "pray," "continue," "old," "protect," "bring," "peace," "oil," "poor," and "donate." Compared with those in the low-dialogic group, the organizations in the high-dialogic group appeared to mobilize action in their Facebook messages to a larger extent.

The Twitter data showed 167 frequently occurring concepts, of which both groups of organizations shared 82; the high- and low-dialogic groups had 44 and 40 unique concepts, respectively (see Table 2 and Figure 2). The results of the Mann–Whitney *U* test, however, did not reveal significant differences among groups in terms of the rank orders of the common concepts ($U = 3{,}202.5$; $p > .10$). This suggests that, much as on Facebook, both groups of organizations adopted the common concepts at a similar rate in communicating with stakeholders. The top 10 unique concepts for the low-dialogic group were "lives," "Syrian," "home," "program," "response," "access," "kids," "human," "information," and "hunger." The top 10 unique concepts for the high-dialogic group were "live," "word," "Christian," "Yemen," "spreading," "report," "old," "best," "difference," and "photo." This list of unique concepts reveals how less and more dialogic organizations tended to explore different concepts in communicating with stakeholders on Twitter.

Table 2. Frequently Occurring Concepts in Organizations' Twitter Posts.

Common concepts	Low-dialogic group	High-dialogic group	Unique concepts	Low-dialogic group	Unique concepts	High-dialogic group
support	2,630	3,047	lives	1,537	live	1,035
thanks	3,447	1,736	Syrian	1,154	word	459
children	2,070	2,852	home	491	Christian	416
people	1,972	1,650	program	410	Yemen	365
work	1,738	1,773	response	410	spreading	362
refugees	2,189	1,236	access	405	report	361
sharing	909	1,903	kids	390	old	340
need	1,563	1,201	human	357	best	329
world	1,259	1,134	information	322	difference	270
helping	1,003	1,096	hunger	309	photo	239
join	986	862	South Sudan	298	post	230
love	606	1,073	displaced	293	petition	221
water	1,109	530	countries	287	tax	218
change	755	824	disaster	284	shops	208
hope	646	933	relief	279	brilliant	206
story	840	702	emergency	266	ready	194
time	696	803	event	236	contact	193
families	942	522	staff	235	ground	189
girls	662	692	agencies	230	questions	189
community	866	484	message	223	start	181

Note. Only the 20 most frequently occurring concepts are presented.

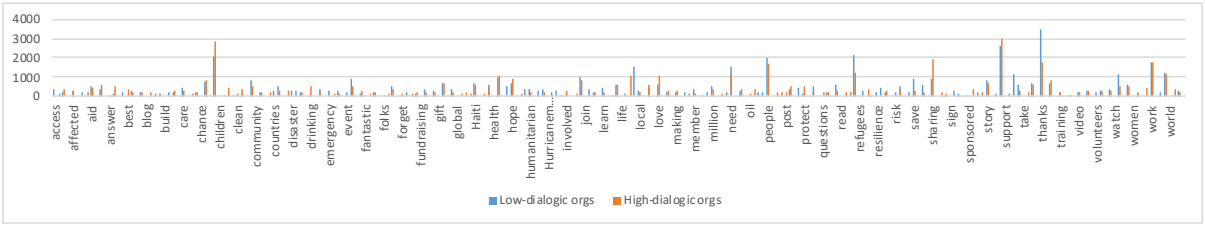

Figure 2. Frequently occurring concepts in organizations' Twitter posts.

Co-Occurring Concepts

The semantic network analysis showed that at least half of the top 20 central concepts appeared in both groups (see Tables 3 and 4). Specifically, the central concepts of "people," "work," "support," "world," and "need" appeared concurrently with many other concepts across the two data sets, which reflected the nature of the operations of the humanitarian relief and development organizations under study. The results of the Mann–Whitney *U* test revealed significant differences between low- and high-dialogic groups in terms of the rank orders of the common central concepts on Facebook (n = 94; U = 2,865; p < .01) and Twitter (n = 82; U = 2,246; p < .01). This suggests that the two groups of organizations were different in the ways they used co-occurring concepts in their posts. These differences were explained by the network measures.

At the network level, the centrality of the concepts was more unevenly distributed in the high-dialogic groups in both the Facebook and Twitter data sets, which was indicated by the higher centralization scores (see Tables 3 and 4). At the same time, the higher density in the low-dialogic groups in both data sets showed that the concepts used by organizations in this group were more closely connected to each other. In other words, compared with the more dialogic organizations, less dialogic organizations adopted more uniform strategies by using a similar set of central concepts that co-occurred with many other concepts in their communication with stakeholders on Facebook and Twitter.

Table 3. Top Central Concepts in the Facebook Data.

Central concepts	Low-dialogic group		Central concepts	High-dialogic group	
	Degree	Nrm Deg		Degree	Nrm Deg
children	128	1	**people**	140	1
families	128	1	**support**	140	1
work	128	1	**communities**	139	0.993
communities	128	1	**need**	139	0.993
support	128	1	**country**	139	0.993
lives	128	1	**lives**	138	0.986
country	128	1	**work**	137	0.979
program	128	1	**provide**	137	0.979
people	127	0.992	join	137	0.979
need	127	0.992	time	137	0.979
provide	127	0.992	**world**	136	0.971
home	127	0.992	local	136	0.971
learn	127	0.992	government	136	0.971
water	126	0.984	change	135	0.964
world	126	0.984	**water**	135	0.964
team	126	0.984	drinking	135	0.964
helping	126	0.984	take	135	0.964
food	126	0.984	**families**	134	0.957
partners	126	0.984	**share**	134	0.957
share	126	0.984	use	133	0.95
M	113.426	0.886	*M*	114.355	0.817
SD	15.066	0.118	*SD*	20.923	0.149
Network centralization	11.56%		Network centralization	18.58%	
Density	0.886		Density	0.817	
SD	0.318		*SD*	0.387	

Note. Only the 20 most central concepts are presented. Concepts in **boldface** indicate the common concept across groups. Nrm Deg = normalized degree scores; *M* = mean; *SD* = standard deviation.

Table 4. Top Central Concepts in the Twitter Data.

Central concepts	Low-dialogic group		Central concepts	High-dialogic group	
	Degree	Nrm Deg		Degree	Nrm Deg
work	125	1	**people**	118	0.975
support	124	0.992	**children**	117	0.967
people	124	0.992	**support**	117	0.967
need	123	0.984	**work**	117	0.967
children	122	0.976	**time**	116	0.959
lives	122	0.976	**need**	115	0.95
thanks	120	0.96	live	115	0.95
helping	120	0.96	**sharing**	109	0.901
families	118	0.944	helping	109	0.901
world	117	0.936	hope	109	0.901
community	117	0.936	**world**	107	0.884
team	116	0.928	change	106	0.876
save	115	0.92	**join**	106	0.876
water	115	0.92	**refugees**	104	0.86
refugees	114	0.912	love	101	0.835
sharing	114	0.912	girls	100	0.826
join	114	0.912	team	97	0.802
look	114	0.912	poverty	97	0.802
provide	113	0.904	community	96	0.793
time	113	0.904	life	95	0.785
M	88.175	0.705	*M*	71.557	0.591
SD	22.396	0.179	*SD*	22.361	0.185
Network centralization	29.94%		Network centralization	39.02%	
Density	0.705		Density	0.591	
SD	0.456		*SD*	0.492	

Note. Only the 20 most central concepts are presented. Concepts in **boldface** indicate the common concept across groups. Nrm Deg = normalized degree scores; *M* = mean; *SD* = standard deviation.

Thematic Clusters

The analysis also revealed the thematic differences across platforms. On Facebook, the clusters overlapped in both groups of organizations (see Figures 3 and 4). In the low-dialogic organizations, five clusters, counterclockwise, represented the themes of "activity" (purple circle: concepts of event, join), "action" (light-green circle: concepts of learn, share), "refugees" (blue-green circle: concepts of refugees, mother), "communities" (pink circle: concepts of communities, country), and "volunteering" (yellow circle: concepts of volunteers, team). In the high-dialogic organizations, the five clusters represented the themes of "action" (blue-green circle: concepts of join, share), "environment" (light-green circle: concepts of climate, energy), "water" (yellow circle: concepts of water, clean), "communities" (pink circle: concepts of

communities, risk, reduction), and "volunteering" (purple circle: concepts of visit, volunteers). Action, communities, and volunteering were common across both groups of organizations.

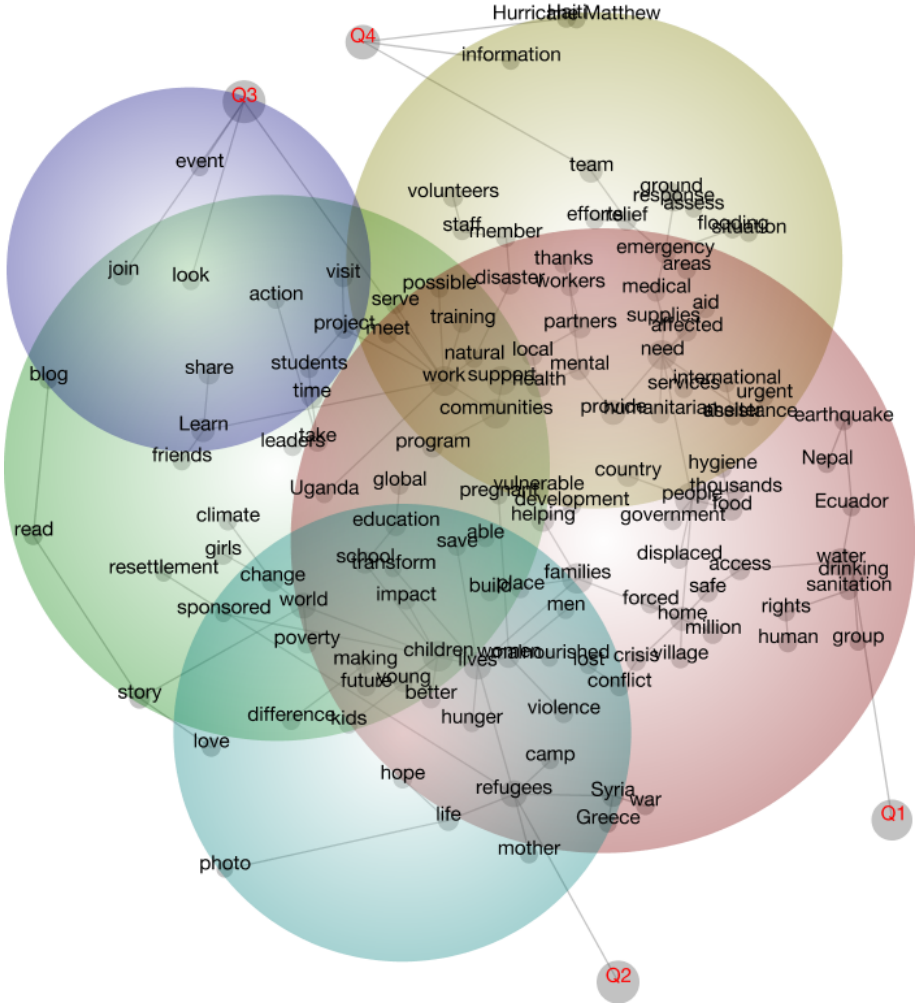

Figure 3. The concept map of the low-dialogic organizations across four quarters on Facebook. Q1–Q4 refer to four quarters (January–December 2016).

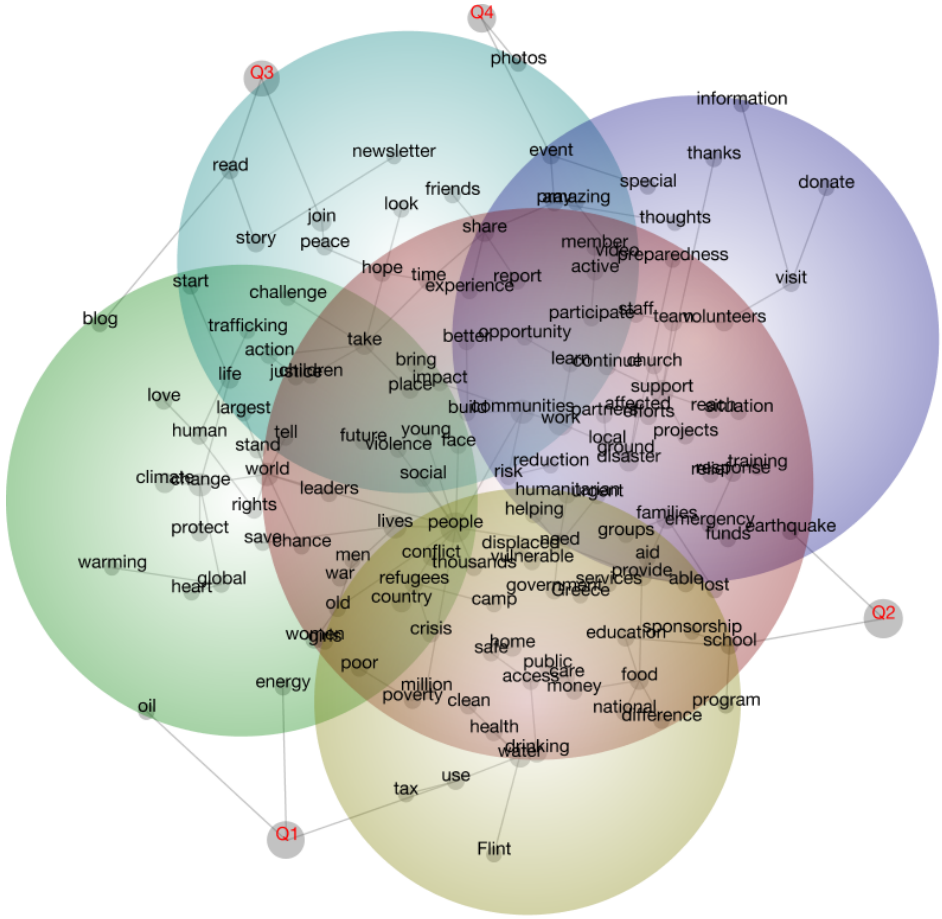

Figure 4. The concept map of the high-dialogic organizations across four quarters on Facebook.

Compared with those on Facebook, the clusters on Twitter were more separated from each other for both groups of organizations (see Figures 5 and 6). In the low-dialogic organization, four clusters were detected, which counterclockwise represented the themes of "crises" (pink circle: concepts of crisis, aid), "action" (light-green circle: concepts of action, change), "appreciation" (yellow circle: concepts of support, thanks), and "response" (purple circle: relief, survivors). In the high-dialogic organizations, two clusters covered the similar theme of "action" (concepts of involved and sign in the blue-green circle; concepts of fight, change in the yellow circle). The other three clusters represented the themes of "appreciation" (pink circle: concepts of thanks, followers), "communication" (purple circle: concepts of question, contact), and "humanitarian relief" (light-green circle: concepts of war, hurricane). Action, appreciation, and response/relief were the common themes across both groups of organizations.

Together, these findings showed that, with overlapping themes observed in low- and high-dialogic organizations, variations existed at the platform level. Both platforms were used for mobilization. Yet

Facebook was also used to portray team efforts and community engagement while Twitter was used for direct expression of appreciation for different types of stakeholders.

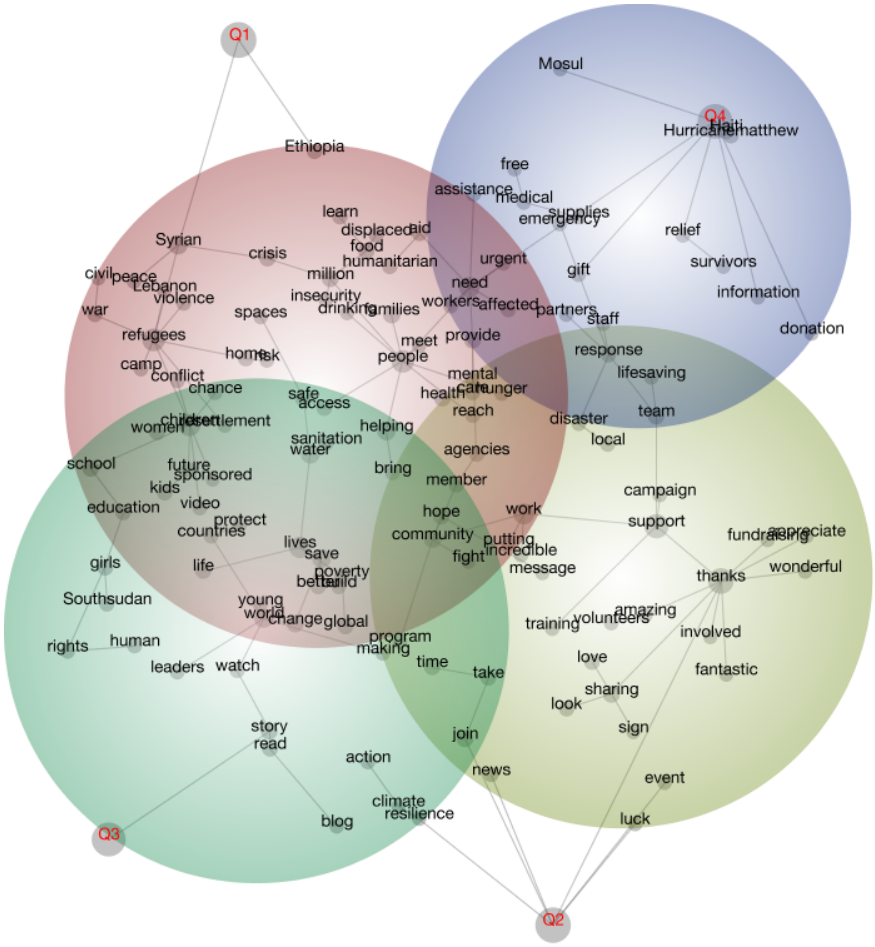

Figure 5. The concept map of the low-dialogic organizations across four quarters on Twitter.

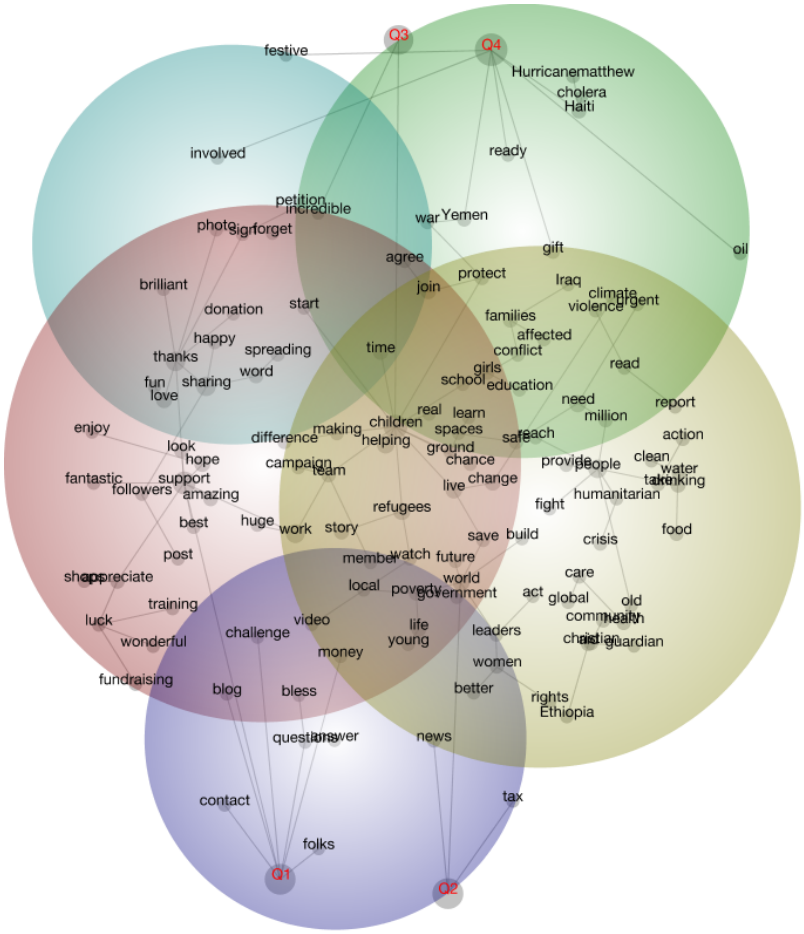

Figure 6. The concept map of the high-dialogic organizations across four quarters on Twitter.

Evolution of the Networks

Organizations' level of dialogic social media use was a more salient factor in differentiating semantic network patterns on Twitter than it was on Facebook. As shown in Figures 3 and 4, for both groups of organizations, the semantic networks on Facebook exhibited the pattern in which a unifying common set of thematic topics was revealed across four time periods, as indicated by the distance of the four quarter tags away from the center of the concept map. In addition, the message strategies at Q1 and Q2 were different, which was indicated by the spatial distance between these two tags, whereas those at Q3 and Q4 were similar because of the adjacent tags. On Twitter, a common core of thematic topics also existed over time in both low- and high-dialogic groups' posts (see Figures 5 and 6). Nonetheless, the former exhibited distinguishing topics for each time period, whereas the latter showed similar message strategies between Q1 and Q2 and between Q3 and Q4. Moreover, there were more discernible differences in centralization (29.94% vs. 39.02%) and density scores (.71 vs. .59) between the two groups on Twitter.

Discussion

This study seeks to understand how organizations' dialogic social media use aligns with the ways they communicate and engage with stakeholders on social media. Specifically, it examines how stakeholder targeting and message framing on Facebook and Twitter reflect organizations' perceived dialogic social media use. It addresses the gaps in the existing research on dialogic communication focused on structural implementation of social media features (Kent & Taylor, 2018; Wirtz & Zimbres, 2018) by examining the links between the relational and rhetoric aspects and dialogic social media use. Moreover, addressing the research from the organizations' perspective, our study supplements previous public relations research, which has predominately relied on content analyses of organizations' profiles and posts to examine either dialogic employment (e.g., Rybalko & Seltzer, 2010; Wang & Yang, 2020) or stakeholder targeting (W. Liu & Xu, 2019; Saxton & Guo, 2014). In doing so, our study returns to the theoretical assumption of stakeholder engagement by examining how organizations themselves perceive their stakeholders and their salience (Mitchell et al., 1997) through how they target those stakeholders in their social media posts.

In this study, the three categories of stakeholders the organizations in the high-dialogic group aim to communicate with are more distinguishable than those in the low-dialogic group. In particular, we separate the targeting of social media fans/followers from the targeting of the other two categories of stakeholders (i.e., donors, companies/firms, public agencies and news media, and other organizations providing similar services), understanding each as different ways of influencing organizations' acquisition of online support, resources, and information. The separation of the social media-only stakeholders from others also echoes previous research, which has showed that more dialogic organizations focused on engaging visitors within online dialogic spaces and maintaining ongoing communication with visitors (Rybalko & Seltzer, 2010). Less dialogic organizations, on the other hand, seek to communicate with four categories of stakeholders, which are relatively diffused, representing disparate interests and needs. To some extent, the less dialogic manner reflects the mechanism of accommodating diverse needs and habits of different types of stakeholders concurrently (e.g., donors, news organizations, populations vulnerable in disasters, the general public; Brown & Moore, 2001).

Examining the connection between organizations' dialogic social media use and implicit framing through the semantic network analysis of their social media posts enriches the theorization of dialogic communication by considering discourse and language (Kent & Taylor, 2018). Specifically, building on and expanding existing research on implicit framing, which has focused on a single social media platform and a particular crisis situation (Gerken et al., 2016; van der Meer, 2014), this study examines and compares organizations' semantic network patterns of messages over time across platforms. The results reveal that on both platforms we examined, variations in dialogic social media use are reflected in the semantic patterns of co-occurring concepts (i.e., the association among concepts) in organizations' social media posts. Specifically, compared with the organizations in the low-dialogic group, more dialogic organizations tend to use certain central concepts (i.e., those that co-occur with many others), with more peripheral concepts on the side. Moreover, for the organizations in the high-dialogic group, the less dense semantic networks suggest less connectivity among the concepts that appear together in their posts. This means that organizations in this group tend to employ a "bolder" strategy of using diverse types of concepts, not necessarily popular ones.

Organizations' possession of a higher level of risk tolerance is important for implementing dialogic principles (Huang & Yang, 2015). This may explain the more diverse message strategies employed by the more dialogic organizations under study. In contrast, organizations in the low-dialogic group tend to adopt a more conservative strategy of using generic or popular concepts. Together, these findings highlight the importance of examining the co-occurring patterns of messages in theorizing and comparing organizations' framing strategies (Schultz et al., 2012; Xiong et al., 2019), which reflect different levels of dialogic orientation.

Research has shown differences in organizational messages on different platforms (Fu & Zhang, 2019; Muralidharan, Rasmussen, Patterson, & Shin, 2011). Echoing this line of work, the semantic analysis of the clusters shows that compared with Facebook, organizations tend to use Twitter to express appreciation for stakeholders. Moreover, both groups of organizations employ distinct message strategies on Facebook to some degree (Q1, Q2), and then at subsequent times their strategies converge (Q3 and Q4). In contrast, on Twitter, while the organizations in the low-dialogic group exhibit relatively distinguishing patterns for each time period, more dialogic organizations' message strategies at subsequent time periods (Q1 and Q2, Q3 and Q4) change little over time, which indicates the implementation of timely strategies for a longer term. This study shows that, on the one hand, the need to adapt and maintain framing strategies over time may signal the norms of both timely and relationally driven response to stakeholder demand on more socially oriented and technically sophisticated platforms (e.g., Facebook) regardless of levels of dialogic orientation. On the other hand, on platforms that pose limitations on message format (e.g., 280 characters on Twitter), there is a higher likelihood of variation associated with dialogic orientation (D. Kim et al., 2014). Combining this with the finding about the lack of common co-occurring concepts in the semantic network of the more dialogic organizations (based on analyses of their network density and centralization scores) suggests that organizations' dialogic orientation may make a difference on platforms like Twitter in that the use of message strategies that would take time to take effect and that would be composed of diverse concepts increases.

Theoretical Contributions and Practical Implications

This study makes three theoretical contributions to the growing body of research on organizational use of social media. First, it opens up a new line of research by focusing on perceived dialogic social media use in its examination of different forms of stakeholder engagement. Delving into organizations' perceptions of dialogic orientation may expose potential gaps in the theorization of dialogue because of the discrepancy between circumstantial realities and the ideals of dialogue (Lane, 2018).

Second, existing works on dialogic communication tend to use limited categories of stakeholder groups (e.g., D. Kim et al., 2014; Uysal, 2018), or equate use of social media features with stakeholder engagement (Saxton & Guo, 2014; Taylor, & Kent, 2014). This study addresses these limitations and integrates the framework of stakeholder salience into the theorizing of dialogic communication by considering how organizations' perceived dialogic social media use connects to broader categories of stakeholder targeting. Findings highlight that dialogic social media use is not only manifested in the use of social media features (Wirtz & Zimbres, 2018) but also associated with the types of stakeholders that organizations target on social media.

Third, examining how organizations' perceived dialogic social media use is linked to their message framing in the form of semantic networks, this study offers a way to consider rhetoric in the conceptualization of dialogic communication (Kent & Taylor, 2018; Romenti, Murtarelli, & Valentini, 2014). Most importantly, the semantic network under study consists of the issues that are communicated by the organizations working in a similar domain with their stakeholders. This approach contributes to the growing area of a network perspective in public relations, which provides a comprehensive understanding of the relationship in which organizations, messages, and stakeholders are embedded (Yang & Saffer, 2019).

Practically speaking, findings of this study suggest that nonprofit leaders and social media managers should consider their dialogic social media use in tandem with the stakeholders they target and the issues they intend to communicate about with stakeholders. For operations that involve a broad range of stakeholders (e.g., disaster relief), organizations may selectively, instead of extensively, invest efforts in dialogic social media use. Moreover, in prioritizing resources for stakeholder engagement practices, organizations should adapt framing strategies slightly differently in different social media platforms and consider other potential organizations working in the similar domain using the same platform. For example, compared with Facebook, Twitter may be more suitable for building emotional attachment with stakeholders. Depending on the level of dialogic use, organizations may implement different types of message strategies over time—for example, exploring distinct topics once every month or sticking to topics that take some time to percolate, and choosing a similar set or diverse concepts in the messages.

Limitations and Future Research

This study has four limitations that suggest directions for future research. First, we retrieved organizations' perceived dialogic social media use without comparing it with organizations' behavioral data. Future research can incorporate both sources of data to examine the links among dialogic communication, stakeholder targeting, and implicit framing. This can further our understanding of organizations' social media use for stakeholder engagement and advance theory development. Relatedly, in the survey, we did not differentiate dialogic orientation across different social media platforms. The topic of examining whether and how dialogic orientation differs across platforms (D. Kim et al., 2014) merits more research.

Second, we focus on analyzing the semantic patterns of organizations' posts on Twitter and Facebook to reveal their strategy of implicit framing. A next step, collecting data from news media and the public (e.g., comments in response to organizations' Facebook posts, public tweets) could shed further light on the alignment process among different groups of frame builders (e.g., Gerken et al., 2016; van der Meer, 2014).

Third, even though the original sampling list contained organizations from countries around the globe, only organizations from eight countries completed the survey with valid responses. Future research should ensure better representation of diverse countries in the sampled organizations and compare country differences in terms of dialogic orientation and stakeholder engagement via social media. Relatedly, the sampled organizations were limited to those that focus on humanitarian relief and development. Findings may not be generalizable broadly to all types of nonprofit organizations, businesses, or government entities.

A topic worth exploring is the extent to which the connections among dialogic orientation, stakeholder targeting, and implicit framing found in this study hold or vary by different types of organizations.

Lastly, only English content was included for semantic network analysis, and the results should be interpreted with caution. Future research may use other computer-assisted semantic network analysis techniques, which can simultaneously process different languages, to compare implicit framing across institutional and cultural contexts.

Conclusion

Theoretically, this study integrates and enhances the dialogic communication framework, stakeholder theory, and implicit framing by examining how organizations' perceived dialogic social media use is linked to their stakeholder engagement on social media. Specifically, our findings reveal that organizations with a higher level of dialogic social media target more distinctive categories of stakeholders on social media. Moreover, more dialogic organizations explore more diverse concepts in their social media posts, not necessarily popular ones. In terms of platforms, Facebook and Twitter exhibit both thematic similarities and differences, but semantic differences between organizations in the low- and high-dialogic groups are more salient on Twitter than on Facebook. This research also contributes to the methodological innovation in the field of communication, particularly public relations, by adopting a mixed-methods approach and supplementing online survey data with digital trace data of the surveyed organizations' social media content.

This study is conducted amid the growing global concern about environmental hazards of all sorts. Social media, along with other new media technologies, are incorporated as part of human adaptations. Amid the hopes and hype, more work still needs to be done to untangle the actual uses of these technologies by organizations to engage in dialogue, negotiate meanings, and formulate corresponding adaptive strategies with stakeholders, in particular in the context of humanitarian relief and development.

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