

## **Prosocial vs. Trolling Community on Facebook: A Comparative Study of Individual Group Communicative Behaviors**

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Communicative behaviors displayed on the group “walls” within and between a prosocial and a trolling community on Facebook were compared based on the following conceptual frameworks: (1) types of information exchange behaviors, (2) message contingent interactivity, and (3) proportion of agreement and disagreement. Findings revealed that participants in a prosocial community exchanged more emotionally supportive messages and showed greater level of message reciprocity and member agreement. That is not to say that a trolling group exists in disharmony. On the contrary, participants of a trolling community were found to agree more with one another than disagree. Findings extend online community research that largely examined solo communities and investigated trolling as individual activities, and show that at the group level, a trolling community can instead be more collaborative than acrimonious. Practical suggestions and implications of findings in the context and theorization of online communities are discussed.

*Keywords: online community, prosocial, trolling, content analysis, information exchange, message interactivity, Facebook*

A community is traditionally defined as a synergistic group of interconnected individuals tied to a place or to shared interests (Dalton, Elias, & Wandersman, 2001; Heller, 1989; Wise, Hamman, & Thorson, 2006). An online community, on the other hand, is devoid of physical localities (Reich, 2010). This makes the “common interests and practices” displayed and enacted by a group of people via a “common location or mechanism” (Ridings, Gefen, & Arinze, 2002, p. 273) as the most salient indicator of communities that exist in online settings. A synthesis of extant literature on online communities showed that, apart from software and relation to physical communities, online communities are increasingly characterized by communicatory attributes such as nature and intensity of interaction, shared activities, and social language and conventions (Lazar & Preece, 1998).

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Date submitted: 2016-07-24

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Social networking platforms have shifted the organization of virtual communities to structured personal networks of identities and interactional patterns, and enabled communities of multitude orientations and interests to coexist on social media (Kaplan & Haenlein, 2010). Among the host of social networking sites available, Facebook serves as an ideal environment for the study of communities and information flows because it comprises a broad online population of individuals whose online networks can be aggregated into group-based identities, and it offers features—such as Facebook pages—that enable the easy formation and management of online communities (Ganster & Schumacher, 2009). Such conditions call for a deeper understanding of the communicative aspects in the different types of communities formed on social media, particularly on Facebook.

Conceptually, online communities can be broadly differentiated through an amalgam of prosocial and antisocial communicative behaviors, which are said to be behavioral outcomes of the online disinhibition effect due to loosening of social context and restrictions in CMC (Suler, 2004). For instance, constructive prosocial behaviors are the outcomes of benign disinhibition, and disruptive antisocial behaviors are due to toxic disinhibition. Studies done in this conceptual strand of communicative behaviors displayed in online communities have tended to investigate specific communities displaying behaviors from either end of the spectrum, such as prosocial behaviors in online support groups (e.g., Barak, Boniel-Nissim, & Suler, 2008) and antisocial behaviors in cyberbullying (e.g., Vandebosch & Van Cleemput, 2009).

Empirical knowledge on the communicative behaviors displayed by different online communities on social networking sites lacks comparative research to address the inconsistencies in terms of the purpose and user base of different online communities, as well as their communication patterns (Gallagher & Savage, 2013). The impetus to understand online communities through a comparison of commonalities and differences as manifested in interactions among members, particularly in communities that are characteristically prosocial and antisocial (i.e., trolling), is warranted. The present study bridges this gap by examining the similarities and differences in individual-group communicative behaviors exhibited within and between a prosocial and an antisocial, particularly trolling, community on Facebook.

### **Prosocial and Trolling Online Community**

A prosocial community on Facebook can be seen as one where participants carry out “voluntary actions that are intended to help or benefit another individual or group of individuals” (Eisenberg & Mussen, 1989, p. 3). While a variety of prosocial behaviors are manifested in online communities that vary in interests and goals (Ridings & Gefen, 2004), Wellman and Gulia (1999) showed presence of social and emotional peer-group support as main determinants of prosocial virtual communities. On the other end of the spectrum, an antisocial community displays behaviors that can take the form of rude language, harsh criticism, trolling, and flaming, among others, with trolling as one of the most common antisocial behaviors exhibited on the Internet. Although the definition varies, trolling is generally recognized as an online behavior involving deception that should not be responded to (Buckels, Trapnell, & Paulhus, 2014). In brief, a trolling community is generally expected to display participant behaviors that are indicated by (1) messages from a sender who appears outwardly sincere, (2) messages designed to attract

intemperate responses or flames, and (3) messages that waste a group's time by provoking futile argument (Herring, Job-Sluder, Scheckler, & Barab, 2002).

Research on online trolling has examined the individual characteristics that define trolling behavior (e.g., Hardaker, 2010), the motivations and intent (e.g., Lenhardt, 2013), and the ideologies displayed in messages (e.g., Phillips, 2011). Inopportunely, much of it explored trolling as individual hostile behaviors occurring *within* an online community (e.g., Buckels et al., 2014; Herring et al., 2002; Tepper, 1997). Scant attention has been given to trolling behaviors examined from the group viewpoint in online communities dedicated to trolling. The present study, therefore, explores the individual-group communicative behaviors in a trolling community as the epitome of an antisocial online community on Facebook vis-à-vis a prosocial community through a comparative approach.

In doing so, the present study extends research on online communities by distilling the common and distinct communicative behaviors exhibited in a prosocial and trolling community on Facebook according to three communicative attributes displayed by the participants, namely (1) the types of information exchange behaviors (i.e., collaborative and hostile) exhibited among participants, (2) the level of contingent interactivity displayed in the messages posted by community participants, and (3) the proportion of participant agreement (and disagreement) displayed in the messages shared in the different communities.

### **Online Information Exchange Behaviors**

The exchange and availability of information present the most important aspects of an online community (Blanchard & Horan, 1998; Filipczak, 1998). Indeed, as found in a survey done across 27 online communities, information access remains the most common reason for individual participation across all online community types (Ridings & Gefen, 2004). A unique characteristic of information on virtual communities is that it is self-sustaining. User-generated information and messages generated among members of the community draw more members to contribute, making it crucial to understand the pertinent types of information that generate individual-group participation among members. Studies on virtual communities have, thus, stressed the importance of exploring the nature and quality of online conversations as a means to understanding these online communities (see, e.g., Marra, Moore, & Klimczak, 2004; McClean, 2011).

To analyze the types and nature of informational exchange behaviors displayed in prosocial and trolling online communities, the present study turns to two schemas that categorize the information exchange behaviors in online communities. An earlier schema by Henri (1992) enabled researchers to examine the nature of online postings in CMC according to four dimensions: (1) social (statements that relate to others), (2) interactive (statements that refer to other postings), (3) cognitive (statements of clarification, inference, judgment, and strategies), and (4) metacognitive (statements about reasoning). The more recent work by Burnett (2000) categorized information exchange in online communities into multiple subcategories and provides another quantitative means of analyzing the content of online postings. Messages are divided into (1) collaborative or positive behaviors (pleasantries, play, emotional support, queries, and directed group projects) and (2) hostile behaviors (trolling, flaming, and spamming).

To obtain a more comprehensive and detailed analysis of the information exchange behaviors exhibited in a prosocial and trolling community, the present study digests the two schemas into the following nine analytical categories broadly categorized based on collaborative interactive behaviors and hostile interactive behaviors.

### ***Collaborative Interactive Behaviors***

Such interactions displayed by members in a community are social in nature, are collaborative, and are positive interactions that reinforce the community (Wellman & Gulia, 1999). Burnett (2000) posited that such behaviors can either (1) not be directly related to information seeking (pleasantries, play, and emotional support) or (2) be specifically oriented toward the seeking and sharing of information (queries, replies to information requests, and directed group projects).

These interactions can take the form of pleasantries and gossip. Similar to the social dimension of Henri's (1992) model, such statements are polite and attempt to relate and connect with others. In addition, virtual groups can also be sites for the exchange of gossip and rumors, which Bordia, DiFonzo, and Chang (1999) posited as a way of ensuring ongoing community conversations. Cognitive statements can also indicate collaborative interactions between community discussants. Such cognitive-based comments include statements of clarification, inference, judgment, and strategies made in response to other postings (Henri, 1992). Although this behavior is a collaborative one, it can also include statements highlighting disagreement among community members, so long as the underlying nature of the behavior is not hostile. For example, constructive criticisms through logical arguments or accompanied by evidence can be forms of cognitive statements that display a disagreeable tone but are collaborative in search of "truth" and knowledge.

Playful interactions in CMC have been found to contribute to the sense of community in online groups (Burnett, 2000). These language games and play are manifested at the linguistic level through different kinds of language play, such as the playful use of texts, puns, memes, and emoticons (Donath, 1999). Indirectly, such message exchanges foster light-hearted discussions that encourage more participation among members. On a more serious note, collaborative interactions in an online community can also include queries or requests for information. As found by scholars, online communities are essentially "information neighborhoods" (Burnett, 2000) that support information gathering (Williamson, 1998). While members of any particular online community may have multiple information needs, queries are those needs that have been explicitly articulated in the form of questions. In that sense, replies to information requests, referring to the act of responding to those queries or requests for information (Donath, 1999), indicate collaborative interactive behaviors displayed by community participants. Especially pertinent to prosocial online communities, members of such communities were found to act as "pseudo information professionals" or "information intermediaries" (Burnett, 2000) who attend to the information queries of fellow members.

Also pertinent in online support groups are empathetic behaviors in the form of emotional support and encouragement, which are indicative of collaborative community interactions. Emotional support is not limited only to online support groups, but has also been found to be prominent in online communities in

general where members developed close interpersonal relationships due to regular and supportive interactions (Wellman & Gulia, 1999). Apart from member-directed collaborative interactions in a community, online communities also provide the opportunity for members to collectively make an impact outside the community, such as in larger civic areas or to the private lives of its members. Such collaborative behaviors can be termed interactions with “directed group projects” (Gurak, 1999), and they refer to behaviors that exhibit collective group activities, such as raising money for other members or word-of-mouth publicity for good causes.

### ***Hostile Interactive Behaviors***

Two of the most common types of behaviors most associated with hostile interactive behaviors among members in online communities are trolling and flaming. Trolling often involves the posting of deceptive or disruptive information in order to lure vulnerable “newbies” into replying with self-satisfied corrections, with no apparent instrumental purpose (Tepper, 1997). Donath (1999) emphasized that a successful trolling posting cannot be so overly controversial that members will ignore it. Although not all trolling comments are necessarily hostile, they are inherently nonconstructive and noncollaborative, creating unproductive discussions among community members. Whereas trolling draws in particularly naive or vulnerable members, flaming is a directly hostile communication that incites any or all members in disagreement and degenerates into name-calling and abuse (Wi & Lee, 2014). As Burnett (2000) put it, flaming is “simply online ad-hominem argumentation, aiming neither for logic nor for persuasion, but purely and bluntly at insult” (para. 20).

The present study draws on Burnett’s (2000) and Henri’s (1992) postulation that online communities can be differentiated by the interactive behaviors through comparing the types of information exchange behaviors that emerge from prosocial and trolling communities on Facebook. Prior research shows that members of prosocial communities, such as online support forums, elicit closeness between one another by exchanging messages that have greater self-disclosure and are lengthier than those of general discussion forums (Barak & Gluck-Ofri, 2007). In the same vein, members of prosocial communities also frequently engage in informational exchanges to collaboratively achieve their goals and solve problems (e.g., Ridings & Gefen, 2004; Wasko & Faraj, 2000). On the other hand, studies show that online trolling groups are less community-focused because trolls prefer to work in isolation (Shachaf & Hara, 2010). It would be difficult for trolls to effectively collaborate or communicate when some members may participate with the intention of disrupting the community by cracking jokes (Buckels et al., 2014) or provoking disputes (Herring et al., 2002), for example. Because we can expect informational exchanges in a prosocial community to be more collaborative than hostile as compared with those in a trolling community, the following hypothesis and question are forwarded to explore these expectations in Facebook communities.

*H1: Participants of a prosocial community on Facebook would display more collaborative and less hostile information exchange behaviors than participants in a trolling community.*

*RQ1: What are the most common types of information exchange behaviors that participants of (a) a prosocial and (b) a trolling community on Facebook engage in?*

### **Contingent Message Interactivity**

As a common term in the field of CMC, interactivity is complex, with multiple dimensions, conceptualizations, and operational definitions (Rafaeli & Sudweeks, 1997; Sundar, Bellur, Oh, Jia, & Kim, 2014). To make sense of it, Kiousis (2002) proffered a seemingly all-inclusive definition of interactivity—"the degree to which a communication technology can create a mediated environment in which participants can communicate both synchronously and asynchronously and participate in reciprocal message exchanges" (p. 372). Sundar and colleagues (2004) clarified further that online interactivity can be understood in two ways—the functional view and the contingency view.

Functional interactivity adopts a structural perspective where interactivity is seen as a technological affordance or structural properties with action possibilities that allow users to interact with the interface and, correspondingly, with other users (Norman, 1999; Sundar et al., 2014). Simply put, the functional view considers components such as the speed and mapping capabilities of the medium itself to facilitate information exchange (Steuer, 1992), where the affordance of clicking "send" to instantly disseminate a photo to other members on Facebook, for example, represents high functional interactivity of the media platform.

The contingent perspective, on the other hand, suggests that interactivity can be measured by message contingency. This is the extent to which subsequent messages and actions carried out on social media platforms, for example, are dependent on prior messages (Lee & Park, 2013). These interactions emphasize how messages relate to one another to convey a sense of dialogue and conversationality (Rafaeli & Sudweeks, 1997; Sundar et al., 2014). Sohn (2011) referred to the contingency view as the semantic dimension of interactivity and postulated that message contingency does not solely operate at the level of text-based exchanges, but could also include icons, symbols, and other message features. Correspondingly, this study will focus on this reciprocal aspect of communicative and informational exchange behaviors exhibited in a prosocial and trolling community on Facebook. Focusing on this aspect also brings the study of online communities beyond technological features and characteristics (i.e., functional interactivity) that have very much been the focus of existing studies on online communities (see Malinen, 2015, for discussion).

Research on contingent interactivity displayed in social media in organization–public communication studies shows that reciprocity levels in messages posted by participants enhance the perceived quality of organization–public trust, relationships, and closeness among members (Ki & Nekmat, 2014; Lee & Park, 2013; Yang, Kang, & Johnson, 2010). Beyond organizational–public communities, members belonging to prosocial communities, such as online support forums, were shown to frequently engage in informational exchanges that build on one another to collaboratively achieve their goals (e.g., Ridings & Gefen, 2004; Wasko & Faraj, 2000). Such reciprocity not only injects a sense of interconnected interaction and user engagement with community conversations (Sundar et al., 2014), but also determines the appeal and longevity of the online community (Wise et al., 2006).

The preceding findings and discussion provide evidence that contingent interactivity would indicate the nature and level of individual–group engagement in online communities. This may lead to a

sense of psychological closeness and interconnectedness among community members (Sundar et al., 2014), which may determine the endurance of online communities, as earlier discussed. Despite such importance, no studies have compared the different levels of contingent message interactivity displayed in online prosocial and trolling communities. The present study, thus, posits that:

*H2: A prosocial community on Facebook would display greater levels of contingent message interactivity as compared with a trolling community.*

### **Participant Agreement**

Because participants in online prosocial and trolling communities are expected to exhibit communicative behaviors that are opposites (positive–negative, constructive–disruptive, and so forth), we could thus expect the proportion of messages expressed in agreement, or disagreement, in the two communities to differ. To some extent, these polarized behaviors are symptomatic of what social network scholars termed “echo chambers,” where groupthink is promoted in communities of networked individuals bounded by common interests, political affiliations, ideological worldviews, and tastes (Garrett, 2009; Gilbert, Bergstrom, & Karahalios, 2009; Sherif, 2010). Hence, online communities have the potential to become self-reinforcing sites for users to selectively expose themselves to, communicate with, and develop relationships with like-minded people who tend to agree with one another (Sunstein, 2009).

A highly cohesive and exclusive homogenous community would, thus, reject deviancy (Sherif, 2010), making members adopt more extreme forms of existing views (Baron et al., 1996; Sechrist & Stangor, 2001). If this is expected of communities existing in ideological chambers, it is reasonable to posit that communities in behavioral chambers may adopt more extreme forms of behaviors that are similarly displayed by others in the community. In other words, if the likelihood of ideas being amplified by repetition or agreement in a positive feedback loop in an online community contributes to an echo chamber of ideology (Clark & Van Slyke, 2010), based on social norm and identity theories, constant exposure to and repetition of consistent behaviors displayed by members in a community facilitate a behavioral chamber. Akin to social modeling and observational learning (Bandura, 1977), someone participating in a trolling community would be compelled to adopt similar antisocial communicative behaviors as displayed by others in the community.

One way to examine the existence of behavioral chambers in both prosocial and trolling online communities is through the level of individual–group assimilation exhibited. This tendency to agree and assimilate with other group members can be explained by the cascading effect derived from the cohesiveness displayed by members (Sechrist & Stangor, 2001). In individual cues-filtered-out conditions, the salience of group identity and social behavioral norms displayed by the group takes precedence over the individual (Reicher, Spears, & Postmes, 1995). In such conditions, individual members are compelled to conform to the consistent views and behaviors displayed by majority others in the group (Cialdini & Goldstein, 2004). This alignment of individual–group views with the group identity can be indicated by the amount of agreement and disagreement displayed between participants (Gilbert et al., 2009).

To this end, Gilbert and associates (2009) developed a scale to establish the existence of chambers in group discussions by comparing the proportions of agreement and disagreement in online blogs with those of face-to-face conversations. Adapted from observations of participant agreements in offline meetings, Galley, McKeown, Hirschberg, and Shriberg (2004) noted that speakers spend 18.7% of the time during meetings actively agreeing and disagreeing with one another, of which agreements accounted for 64% of these opinionated moments. This statistic is extended to online platforms, arguing that cascading occurs if 64% of the comments on blogs agree with the blogger (see, e.g., Gilbert et al., 2009). In regard to the current study, a chambering effect is deemed to exist in prosocial and trolling communities on Facebook when more than 64% of opinionated comments agree on the related postings and messages that appeared on the respective Facebook walls. Because the principles and norms of prosocial communities are likely to encourage behaviors that are more prosocial in nature (e.g., offering help and encouragement), it is logical to expect a higher proportion of comments in agreement in a prosocial community. The present study thus seeks to clarify the level of participant agreement between prosocial and trolling communities by positing that:

*H3: A prosocial community on Facebook would display greater proportion of messages in agreement as compared with a trolling community.*

### **Method**

The present study compares the individual-group communicative behaviors displayed in online communities on Facebook vis-à-vis a prosocial and a trolling community. The communication patterns in the interactions and messages displayed in two of the most prominent prosocial (*Humans of Singapore*) and trolling [*SMRT Ltd (Feedback)*] Facebook groups in the context of Singapore were analyzed and compared for the study's purposes.

Similar to its international counterpart *Humans of New York*, *Humans of Singapore* is dedicated to documenting the stories of the people of Singapore. It has since evolved into a community that shares inspirational photographs and quotes to build empathy and to provide "enriching life lessons" among group members and visitors (Lay, 2014). On the other hand, *SMRT Ltd (Feedback)* started out as a troll page aimed at poking fun at the nation's Singapore Mass Rapid Transit's (SMRT) train breakdowns. It has since amassed 232,934 members as of March 11, 2015, moved beyond criticizing train systems and onto general sociopolitical issues, and grown into "Singapore's biggest troll page" made up of an online community that lives and breathes antisocial, cynical, and offensive content (Lim, 2014). The general communicative behaviors exhibited in these two online groups are thus representative of those in online prosocial and trolling communities as postulated by scholars, where social display of emotional concern, information-sharing, appraisal, and instrumental aid represents prosocial communities (Ridings & Gefen, 2004; Wellman & Gulia, 1999), and messages that seem to be outwardly sincere, that are designed to incite intemperate responses or flames, and that waste a group's time by provoking futile argument, symptomatize trolling communities (Herring et al., 2002).

Content analysis of comments left by participants on the Facebook wall of the two Facebook groups was done for the purposes of the current study. Consistent with Ridings and Gefen's (2004)



analysis of virtual communities, this study defines a participant as anyone who engages in the online community through the posting of comments, regardless of posting frequency. A comment posted on the group's Facebook wall was taken as the unit of analysis, and all publicly accessible (i.e., public view) messages posted within a one-year period, from March 1, 2014, to February 28, 2015, were manually extracted from the two Facebook groups, and screenshots of comments were stored for analysis. Data collection and sampling was done between March 10, 2015, and March 13, 2015.

As discussed earlier, information exchange behaviors include collaborative and hostile exchange behaviors, such as pleasantries and gossip, cognitive statements, language games and other types of play, emotional support, queries, replies to information requests, directed group projects, trolling, and flaming. Table 1 displays the operationalization of the different exchange behaviors that were utilized for coding the information exchange behaviors.

**Table 1. Operationalization of Information Exchange Behaviors.**

Type	Definition
Pleasantries and gossip	- Casual and generally polite remarks used to relate and connect with others (Burnett, 2000). This includes informal greetings, small talk, gossip, or elaborate exchanges to maintain contact among members.
Cognitive statements	- Statements of reasoning (e.g., clarification, judgment, strategies) used to convey a point of view (Henri, 1992). Comprise comments that either agree or disagree, as long as the underlying nature of the message is constructive.
Language games and other types of play	- Refer to a play on language, as seen through playful use of texts, puns, memes, and emoticons (Donath, 1999).
Emotional support	- Outward expression of concern; can take the forms of encouragement, appraisal, affirmation, etc.
Queries	- Specific requests for information explicitly articulated to the community in the form of questions (Donath, 1999).
Replies to information requests	- Comments responding to queries posed by others (Donath, 1999).
Directed group projects	- Messages that call for and facilitate members to collectively make an impact outside the community (Gurak, 1999).
Trolling	- Messages that are designed to attract intemperate responses or flames, and waste the community's time by provoking fruitless argument (Herring et al., 2002).
Flaming	- Outright, hostile messages (e.g., insults, name-calling) that are likely to incite other members (Wi & Lee, 2014).

To determine the level of contingent interactivity, messages are coded according to whether they are contingent on other messages and postings. Contingency is operationalized as any "expression of the extent that in a given series of communication exchanges, any third (or later) transmission (or message) is related to the degree to which previous exchanges (or messages) referred to earlier transmissions (messages)" (Rafaeli, 1988, p. 111). The sampled comments were coded for whether reference was made to any previous comments left on the group's Facebook wall.

The measurements developed by Gilbert and colleagues (2009) were used to measure whether agreement was displayed in each comment. The comments were coded into three categories: agreement, disagreement, and neither. Agreement was assessed based on whether comments exhibited opinions and arguments in support of and approval for the wall posting. Accordingly, disagreements refer to the disapproval of or lack of support for the wall post. The neither category indicates comments that do not fall clearly into the aforementioned categories.

A total of 19,930 wall comments across 276 wall postings were collected. A systematic random sampling was done with every  $k = 20$ th comment across a chronological arrangement of total comments collected per unique wall post, retrieving a final sample of 989 unique messages across 276 posts. Of these, 217 unique messages were from the prosocial group, *Humans of Singapore*, with 16 messages (7.4%) coming from group administrators and 44 messages (20.2%) from 20 different repeat commenters. Of the 772 unique messages from the trolling community, *SMRT Ltd (Feedback)*, 174 messages (22.5%) were from the group administrators, and 117 messages (15.2%) were from 12 different repeat users. This shows that, as compared with the prosocial community, group administrators in a trolling community can be more active in posting and responding to messages, and there are proportionately more unique commenters in the prosocial community (72.4%) than the trolling community (62.3%).

Screenshots of all comments were captured and coded based on protocols defined by the conceptual analysis framework highlighted earlier. The study's researcher coded all comments with a trained undergraduate who coded a randomly selected 25% ( $n = 248$ ) of the sample to check for intercoder reliability (Riffe, Lacy, & Fico, 1998). Scott's pi's for the respective communicatory and informational attributes were as follows: information exchange behaviors = 0.86; message contingency = 0.85; and agreement/disagreement = 0.77.

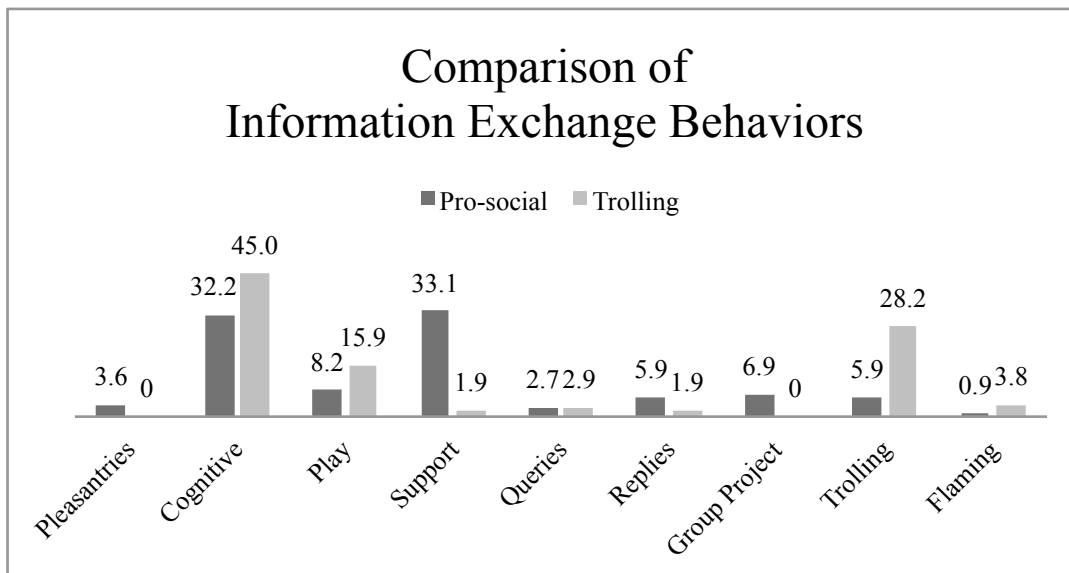
### Findings

Hypothesis 1 posited that participants of a prosocial community on Facebook would display more collaborative and less hostile information exchange behaviors than participants in a trolling community. Crosstab chi-square analysis results revealed that the type of online community significantly differs in the kind of information exchange behaviors exhibited by their members,  $\chi^2(8) = 333.55, p < 0.001, N = 989$ . The presence of pleasantries and directed group projects in prosocial communities was most notable because the two types of behaviors are not displayed in its trolling counterpart. However, the fourth most frequent collaborative behavior, the use of language play, is almost twice as frequently manifested in the trolling community as compared with the prosocial community. Also, while flaming is uncommon in both communities, it is almost nonexistent in the prosocial community. As such, although the interactive behaviors are significantly different between the two groups, evidence shows that a prosocial community on Facebook does not necessarily display more collaborative and less hostile information exchange behaviors than participants in a trolling community. Hypothesis 1 is not supported.

Research Question 1 asked about the common types of information exchange behaviors displayed by participants of a prosocial and trolling community on Facebook. The main types of information

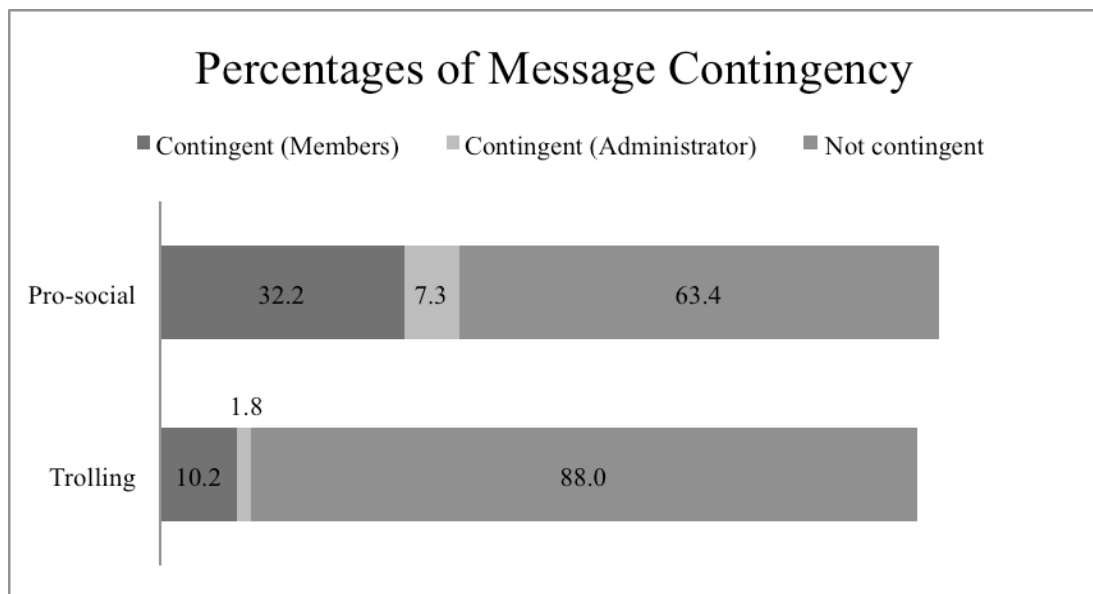
exchange displayed by commenters in the prosocial group were “emotional support” ( $n = 72$ ) and “cognitive statements” ( $n = 70$ ), which together made up 65.3% of all coded comments. In general, commenters regularly engaged in positive behaviors, such as posting words of affirmation and encouragement. For example, in response to a wall posting about a heavily tattooed lady and her right to the choice of having multiple tattoos, comments such as “You are beautiful” and “Do not care about what other people say” were observed.

In comparison, approximately half ( $n = 348$ , 45%) of the comments on the trolling group page were cognitive statements. This is a notable finding because it contradicts the expectation that “trolling” exchanges (as a typology in the framework) would be the most common behavior in an online community dedicated to trolling. Instead, “trolling”-type behavior constitutes 28.2% ( $n = 218$ ) of messages in the antisocial group. On closer examination, the act of trolling, as seen within the trolling community, does not necessarily portray the ill intention of deceiving or disrupting amateur community members as purported by earlier studies (Buckels et al., 2014). Instead, trolling is seen as a casual activity that is not taken seriously by other commenters. For example, in a candid and seemingly meaningless response to a post on a political party in Singapore, a trolling comment such as “I’d prefer it if it was called Love Singapore Deep Deep [*sic*] Party” was observed. Figure 1 shows the distribution of information exchange behaviors observed between the groups.



**Figure 1. Percentage distribution of information exchange behaviors.**

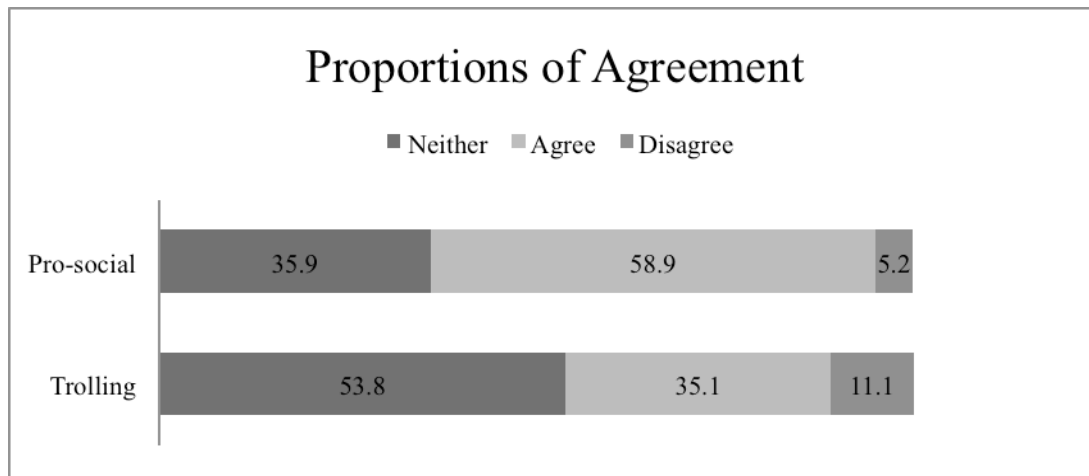
Hypothesis 2 proposed that a prosocial community would display greater levels of message interactivity as compared with a trolling community. Crosstab analysis results showed that the type of community significantly differs with respect to the level of message contingency displayed,  $\chi^2(1) = 86.95$ ,  $p < 0.001$ ,  $N = 989$ . About 39.6% ( $n = 86$ ) of the comments in the prosocial group displayed interactive message replies. Of these interactive comments, 81.4% ( $n = 70$ ) were contributed by group members, and the remaining 18.6% ( $n = 16$ ) came from the group administrator(s). In stark contrast, only 12% ( $n = 93$ ) of the comments in the trolling group contained inferences (e.g., responding and referencing) to comments posted by other members, with a larger portion ( $n = 79$ , 85%) of these comments made by community members and the remaining 15% ( $n = 14$ ) posted by the group administrator(s). This trend echoes those of prior findings, where a greater level of reciprocal and collaborative communication is expected of prosocial communities as compared with antisocial communities. Hypothesis 2 is thus supported. Figure 2 shows the message contingent interactivity levels between the two groups.



**Figure 2. Percentages of contingent comments.**

Hypothesis 3 posited that a prosocial community on Facebook would display greater proportion of messages in agreement as compared with a trolling community. The individual proportions of agreement displayed in the prosocial and trolling groups were found to significantly differ between the two communities,  $\chi^2(2) = 41.02$ ,  $p < 0.001$ ,  $N = 989$ . For the prosocial group, *Humans of Singapore*, agreement clearly outnumbers disagreement 11.6 to 1. Out of all comments coded, 64% ( $n = 139$ ) took sides of either agreement or disagreement. Of these 139 polarized comments, an overwhelming majority (92%) constitute agreement. For the trolling community, *SMRT Ltd (Feedback)*, only 3.1 times more agreement messages were found as compared with disagreement. The percentage of opinionated comments is 46.1% ( $n = 356$ ), out of which 77.2% showed agreement. Hypothesis 3 is supported. It is clear from the findings that a prosocial group shows more harmony than a trolling group. However, that is

not to say that a trolling community exists in complete disharmony. In fact, results showed that the community tended to agree more with one another than disagree (i.e., 3.1 times more agreement messages than disagreements). Figure 3 illustrates the proportions of agreement by the type of online group.



**Figure 3. Percentages of agreement, disagreement, and neither.**

### Discussion

This study explored the individual-group communicative behaviors and characteristics (i.e., types of information exchange, contingent interactivity, and participant agreement) through a comparison of messages shared in a prosocial and trolling community on Facebook. Findings bridge research that had tended to examine online communities from a solo community perspective (e.g., Barak et al., 2008; Eichhorn, 2008, on prosocial community; Phillips, 2011; Vandebosch & Van Cleemput, 2009, on trolling), and contribute to future theorization of online community research conceptually categorized in terms of prosocial and antisocial behaviors (e.g., Ridings & Gefen, 2004; Suler, 2004).

Overall, participants in the Facebook prosocial community were found to engage in information exchanges displaying most *emotional support* and least *flaming* messages. This is as expected from a typical online prosocial community (e.g., Ridings & Gefen, 2004; Wasko & Faraj, 2000). Many messages were seen to contain personal anecdotes. Suggesting members' tendency for greater self-disclosure, this act of sharing intimate and personal information decreases relational barriers and induces a sense of likeability and closeness between community members (Collins & Miller, 1994). It is, thus, sensible for members of a prosocial community to provide emotional support by way of self-disclosure as a means to relate and contribute positively to the community's health and well-being.

Interestingly, the trolling community was found to share information in the form of cognitive statements the most (45% of messages analyzed), instead of trolling (28.2%) or flaming messages (3.8%). This contradicts what is conceptually expected from a trolling community, which is said to be

more inclined to disrupt or create "nuisance." The cognitive statements, generally in the form of logical, well-thought-out comments that provide justification, explanation, and, often, judgment (Henri, 1992), were found to be shared by participants as they shared their thoughts on the main postings posted on the community's Facebook wall. Moreover, on closer examination, the act of trolling, as seen within the trolling community, does not necessarily portray the ill intention of deceiving or disrupting "amateur" members, as purported by earlier studies (Buckels et al., 2014). Instead, trolling in the community can be seen as a casual activity alongside personal expression of opinions and arguments on a certain topic that do not seem to be taken seriously by other commenters or are well-masked with comments that appear "outwardly logical" (Herring et al., 2002).

The lower display of trolling behaviors found in the trolling community could possibly be explained by the lack of anonymity on Facebook, even though participants might not know each other personally. Prior studies have attributed trolling tendencies resulting from individuals' release of inhibitions under the guise of anonymity (Tepper, 1997). For instance, a network analysis of two Korean trolling communities by Wi and Lee (2014) showed that members in trolling communities purposively developed unique reward mechanisms (i.e., banning members from hanging out with one another in offline settings) in order to maintain the anonymity of trolls in the online community and to make the antisocial behaviors collectively sustainable. Considering that interactions on Facebook occur under conditions of identifiable personal information and can be archived (Bosancianu, Powell, & Bratovic, 2013), trolling acts occurring under individual disinhibited conditions are curbed.

One stark difference between the two Facebook communities is that participants in a trolling community display more individualized and less community-focused information exchange behaviors as compared with those in a prosocial community. Of the 772 unique messages exchanged and reviewed in the trolling community, none were found to express a group project (i.e., calls for group members to achieve something together or spread shared causes) (Henri, 1992). Comments in a prosocial community also displayed more interactive messaging and contained more inferences (e.g., responding and referencing) to comments posted by other members in the community as compared with those in a trolling community. This trend echoes prior studies in which a greater level of reciprocal communication is expected of prosocial communities (Ridings et al., 2002). On the other hand, participants in a trolling community are, to some extent, people who consciously identify the prevalence of trolling behaviors in the community. This might explain the low contingent interactivity level exhibited by the comments found in the trolling community, in that commenters do not respond or refer to trolling comments made by other participants as much, so as not to "feed the trolls" or "add fuel" to negative comments.

It is also clear from the findings that participants in a prosocial community show more harmony than those in a trolling community. About 12 comments showed agreement with the postings that were shared on the Facebook wall as compared with one disagreeing message in the prosocial community. That is not to say that a trolling community on Facebook exists in dissension. In fact, results showed that messages in the trolling community tended to agree more with one another than disagree (i.e., 3.1 times more agreement messages than disagreement). This finding challenges the traditional notion of trolling as an antisocial behavior that is disruptive (Hardaker, 2010; Tepper, 1997) by implying that, although

trolling at the individual level can be a form of hostile behavior, a community of trolls might instead be more collaborative—especially so when such hostile behaviors are directed at a common entity.

That said, a collaborative trolling community of individuals aimed at “attacking” common subjects does not make them prosocial, which is more accurately shown by behaviors “intended to help or benefit another individual or group of individuals” (Eisenberg & Mussen, 1989, p. 30). The previously mentioned finding, more significantly, suggests that, despite the type of community or individual motivations for joining it, a community is, by definition, a synergistic group of individuals who share similar interests (Dalton et al., 2001). For one to be recognized and exist in these communities, he or she is more likely to observe and follow the group norms and exhibit cooperative behaviors according to the rewards and sanctions received by others observed in the group (Bandura, 1977). In other words, one does not troll another troll in a trolling community on Facebook. Instead, akin to behavioral modeling, one collaboratively participates in trolling the common target posted on the community’s Facebook wall together with others in the community.

Findings also proffer a number of practical suggestions. For one, policy makers should not be entirely dismissive of the ideas that are shared in an online trolling community. Notwithstanding the intemperate tone and provocative nature of messages as similarly found in prior studies (Buckels et al., 2014; Herring et al., 2002), the current findings reveal that participants in a trolling community can be collaborative and accumulate messages that are collectively aimed at “attacking” a specific target (i.e., issue, policy, person, or organization). As found in this study, such messages can comprise more cognitive statements, such as opinions and ideas, than flaming messages. There is thus potential for alternative and minority opinions and views on social issues and policies to be gathered from such communities, those of which would otherwise not surface in the dominant, more rational and diplomatic public discussions.

Even so, an online trolling community still displays more disharmonious and antagonistic behaviors than a prosocial community. Social networking sites like Facebook might be able to implement strategies to encourage a more harmonious and collaborative community of users on the platform. As found in this study, participants in a prosocial community engage in highly reciprocal communication and are inclined to build on each other’s comments (i.e., contingent interactive) as compared with a trolling community. In this case, Facebook can provide communities intended to be prosocial in nature (e.g., Red Cross, Alcoholics Anonymous) greater options to apply more interactive features in their Facebook group. This can include a greater number of emoticons to represent a wider range of responsive feelings and automated pop-up links to credible news and information that pertain to the topics in conversational threads that users have commented on. This will nudge participants in prosocial communities with more context and background information on the topics to continue their response and engagement with others in the community.

### **Limitations and Future Research**

Findings from this exploratory, comparative study on individual–group communicative behaviors represent a thin slice of communities on Facebook. Two specific Facebook groups with broadly polarized attributes (i.e., prosocial vs. antisocial) symptomatic of online communities in general (Suler, 2004) were

analyzed. On top of this, generalizing the findings to online communities outside Singapore's context should be done with caution. The groups selected for analysis in this study were based on the most prominent prosocial and trolling Facebook communities among the Singaporean public (Lay, 2014; Lim, 2014) and would reflect the idiosyncrasies of the Singaporean culture and communication habits. That said, the prosocial community analyzed here, *Humans of Singapore*, has similar Facebook group counterparts in various parts of the world, such as *Humans of New York*. Future studies aiming to further investigate online prosocial community behaviors by comparing the communicative behaviors found here with those of the many other "*Humans of . . .*" prosocial communities on Facebook would thus find the current findings helpful.

Another caveat is that different trolling communities can have different goals from the trolling community that was examined in this study's context, *SMRT Ltd. (Feedback)*. The type of information exchanges and content of messages might differ depending on the goals and subject of the community. Additionally, the extent of community disruptiveness of trolling behaviors could be related to the degree of anonymity of members in the trolling community. For instance, completely anonymous trolls on Wikipedia can be more disruptive and harmful in their online behaviors, such as vandalizing webpages and flaming other users (Shachaf & Hara, 2010). Future studies should examine the differences in the behaviors displayed by members of trolling communities that are identifiable and completely anonymous. To enhance the comparative understanding of online communities, future studies can compare the behaviors displayed by participants across different communities in the same domain (e.g., health). The current findings based on a comparison of a prosocial and trolling community broadly would provide useful empirical bases for such a research endeavor.

This study is concerned with the comments and messages left by participants. Purely analyzing the attributes of messages may neglect important insights into the commenters themselves (Koop & Jansen, 2009). For example, although the type of information behavior can be identified, the circumstances in which the comment was created and the underlying psychological motivations remain unknown. Similarly, this method of content analysis may also alienate members of the online communities who choose to unobtrusively lurk instead of actively participate (Ballantine & Martin, 2005). Although there were proportionately more unique commenters than repeat ones (72.4% in the prosocial community, 62.3% in the trolling community), finding that participation can come from repeat users requires caution when generalizing the study's findings to the behaviors exhibited by individual social media users in prosocial and trolling communities in general.

Moreover, this study also analyzed interactivity in terms of contingent interactivity among Facebook users. This interactivity aspect may differ depending on the features and functions afforded by different social media platforms. Future research should consider examining the communicative characteristics and behaviors of online communities across other platforms (e.g., Twitter, Instagram). Computational text-mining tools and software could also be used to extract and analyze a greater number of messages across longer time periods and between more online platforms to produce a more generalizable finding of communicatory traits of specific communities. The current findings on online communities on Facebook would benefit such future research.



### Conclusion

Overall, the findings in this study reveal that the types of information exchanged and reciprocity of comments found in prosocial and trolling communities on Facebook do differ. First, although the most common information exchange typologies of prosocial and trolling communities are emotional support and cognitive statements, respectively, both communities predominantly exhibit collaborative behaviors, with an emphasis on the use of cognitive statements. Both types of communities also exhibited low levels of message contingency, with trolling communities building on others' comments to a lesser degree than their prosocial counterparts. Last, findings indicate that at the group level, a trolling community can be more collaborative than acrimonious. Implications of findings in the context of online communities, directions for future research, and practical suggestions based the findings were discussed.

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