Communicating with Reactions: The role of self-presentational concerns in disclosing emotional reactions via Reactions on Facebook

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Abstract

The creation of Reactions allows Facebook users to provide emotional support for members within the social network as well as disclose emotions toward various content. This research study investigated how this one-click tool is appropriated depending on the content of the posts and relational intimacy with the poster and the implications this one-click tool has for self-presentational concerns associated with emotional expression on SNSs. I found that on the whole, people use a greater number of positive Reactions than negative Reactions. In addition, self-presentational concerns were apparent when people used this feature to express emotions. Because of its lightweight nature, however, Reactions appear to be used less as a tool for social support unlike its counterpart, the "Like" button. Feelings such as 'sad' and 'haha' were particularly used more for emotional expression toward informational and entertaining posts broadcast on the NewsFeed.

Introduction

When humans experience any event that elicits emotional reactions, they have a fundamental need to describe and share that episode with relationally close others through verbal communication (Zech et al., 2004). This process, called social sharing, is part of the whole emotional experience and occurs after the initial event. In subsequently expressing our emotions, we seek to re-live the feelings and sensations by narrating a particular episode, but also receive emotional support and feedback from others to help cope in a potentially distressing situation. Social sharing is thus critical to regulating our emotions in everyday life.

Though social sharing has been initially discussed in face-to-face contexts, it occurs in online contexts as well. Recent empirical work has begun to explore how emotion sharing unfolds especially on social network sites (SNSs) such as Facebook, which have gained extreme popularity in recent years; people share emotions about personal life events or any online content they encounter. Emotional expression on SNSs is of particular interest because SNSs inherently place various constraints on the ability to manage the extent and method of disclosure. More specifically, its core properties and affordances constrain the process by collapsing multiple audience groups (boyd, 2010). Collapsed social contexts make emotional expression difficult for people because social sharing is a private process in which targets for sharing are usually intimates, i.e. family members and friends (Rimé, 2009). In addition, emotional expression is influenced by self-presentational desires to appear socially attractive (Leary, 1995). Studies have shown that self-presentational concerns underlie emotional expression with respect to emotional valence, as people who express positive emotions are perceived more favorably by others (Leary, 1995). Previous work on online emotional disclosure have thereby examined how emotional valence (i.e. positivity or negativity) in disclosure differs depending on various network composition features, such as size (the total number of members in the network) and density--how connected members are with each other within a network. (Lin, et al., 2014; Burke & Develin, 2016).

SNSs also provide various communication tools that fulfill social sharing needs to discuss the emotion-eliciting source and our emotional reactions and feelings. SNS affordances relevant to the context of emotional expression are those that impact users' perceived abilities to satisfy their needs for expression and receiving feedback. Since emotional expression is a private process that

involves choosing appropriate individuals to disclose to, identifying which communication forms on SNSs afford the visibility of their posts is critical (Bazarova & Choi, 2014). Previous empirical work has focused on differentiating the public/private nature of communication forms by two key properties: 1) publicness, or the visibility they afford, and 2) directedness—whether the interaction is targeted towards a specific individual, or non-directed towards many (Bazarova et al., 2013). The degree of visibility affects the extent to which self-presentational concerns exist in emotional expressions—for interactions that are more public and less controllable, self-presentational concerns are particularly salient (Bazarova et al., 2013). Interaction directedness also plays a role in emotional expression because social sharing helps maintain and strengthen social bonds (Finkenauer & Rimé et al, 1998). In particular, interactions directed towards weak ties vs. close acquaintances moderate the self-presentational concerns associated with different communication forms. On Facebook, for example, wall posts are visible to others in the network by default, but also directed towards a particular individual and thereby contain more information about the receiver of the wall post. In contrast, private messages are targeted towards the specific receiver and not visible to others in the network.

Within the large body of empirical research on self-presentational concerns underlying emotional expressions, however, *lightweight interactions* have not been considered as a potential form of communication. That is, few have examined how people manage their impressions when interacting with others via simple, "one-click" tools. One significant reason for the lack of research is because most social media technologies did not provide lightweight interaction tools for more granular emotional expression until very recently. Prior research on emotional expression have mostly analyzed emotional content in text by looking for affect words (Burke &

Develin, 2016; Bazarova & Choi, 2014; Lin et al., 2014; Choi & Toma, 2014). Furthermore, it remains unclear what these lightweight interactions mean to both senders and receivers. Though previous research has shown that lightweight signals such as "Likes" on Facebook from friends indicate like-mindedness and support for receivers, much less is understood about what the senders *intend to communicate* by using these tools (Scissors et al., 2016). This leaves several questions unanswered. First, how should lightweight interactions be classified as a communication channel compared to others, and how does this influence self-presentational concerns? Second, what do emotional expressions via lightweight interactions mean for people—does it depart from the traditional notions of social sharing and if so, how?

To help address these questions, the present study takes a self-presentational approach to investigate the emotional expression processes involved in social sharing by examining how people use Facebook Reactions. Facebook's newly introduced feature, Reactions, allows users to express their reactions towards posts on their Newsfeed by choosing from a pre-defined set of five emotions—'love', 'haha', 'sad', 'angry', and 'wow'. (As such, I use the term "reaction" and "emotion" interchangeably throughout).

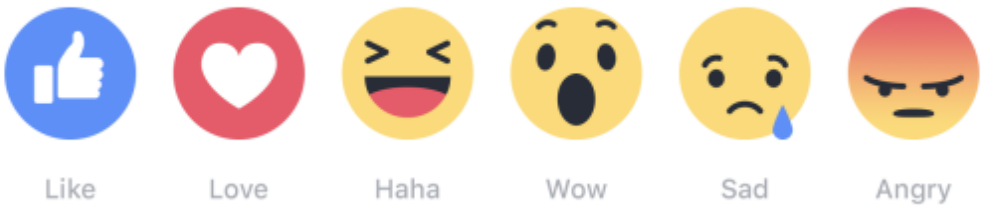

Figure 1. Facebook's Reactions feature

Similar to the 'like' button, Reactions only takes one-click to produce, but discloses more granular emotions compared to a nebulous 'like' and contains three valences: positive, neutral, and negative. Although not as rich as composed communication messages such as wall posts or comments (Burke & Kraut, 2014), it reveals more information about one's emotions, which can have additional implications for self-presentational concerns and emotional expression online. Exploring self-presentational concerns in using Reactions extends previous literature in the following ways: 1) Are there any self-presentational concerns in providing emotional support from the listeners' perspective in terms of the social sharing theory? 2) How does the participation structure that lightweight interactions afford influence self-presentational concerns that exist in emotional expression? 3) How does the effect on self-presentational concerns therefore re-conceptualize the idea of sharing emotions and providing emotional support using one-click tools online? As a result, I aim to measure to what extent self-presentational concerns play a role in using lightweight interactions for expressing emotions towards content. Since self-presentation is closely tied with emotional valence in expression and relational distance between interactants, I also explore how the level of self-presentational concerns vary across the valence of emotions as well as the degree of relational closeness with the content poster. Lastly, to better understand what content people express emotions towards on Facebook, I distinguish the content of each post based on the various types of information and messages these posts convey.

Literature Review

Facebook's newly created Reactions feature opens up new questions for research concerned with social sharing and emotional expression on social media technologies. It makes it possible and necessary to re-evaluate the extensively studied relationship between self-presentational

concerns and emotional expression on SNS in light of lightweight interactions. In this section, I first review the social sharing theory and previous work on the self-presentational nature of emotional expression, with a focus on how this manifests on social network sites. I then move on to discuss findings from prior work that have studied the social value social media users confer on lightweight interactions and any self-presentational issues that may be associated with lightweight interactions.

Lightweight Interactions as Communication

Social network sites, defined as web-based services that allow people to communicate with their existing extended network online (boyd, 2008), have enabled many to interact with peers in their social networks. Communication on social network sites can take various forms. While some involve exchanging text-based messages with one another (one-to-one messages), others such as "one-click tools" are paralinguistic cues that are not comprised of language or any substantive content (Hayes, et al., 2016). Twitter and Facebook's Like buttons (see Figure 2) are some examples of such one-click communication tools that enable user activity.

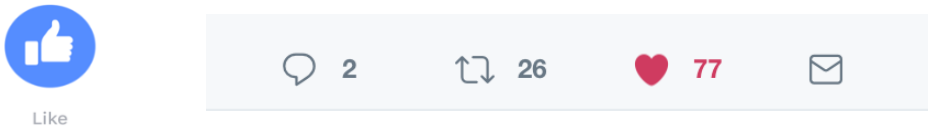

Figure 2. Facebook (left) and Twitter's "Like" buttons (right)

Lightweight interactions are explicit cues that leave visible traces indicating that one has seen and attended to a certain piece of content (Ellison et al., 2014). Because nonverbal cues signaling attention such as eye contact and facial expressions are not available in mediated

communication, lightweight interactions are a commonplace way of showing interest towards others on social media (Walther & D'Addardio, 2001). Their pervasiveness is apparent--on the most popular SNS Facebook, roughly half of the users "Like" their friends' content at least once a day (Scissors et al., 2016). Relatively little research, however, has been conducted about perceptions of both providing and receiving lightweight interactions on SNSs in general. The few that exist were primarily concerned with the receivers' perspective of receiving Likes as feedback. Generally, when people were asked about how much they care about receiving likes, they cared more about receiving likes from certain people rather than the number of Likes received (Scissors et al., 2016). Likes from relationally close people such as friends, romantic partners, and family members were more desired than other audience members. Conversely, another study showed that compared to composed interactions in which people compose and exchange original text, Likes played a less significant role in increasing tie strength between interactants (Burke & Kraut, 2014).

Studies have provided even less information about the *motivations and purposes* that drive users to use lightweight interactions. One study by Hayes et al., however, discovered that people used these digital affordances mainly to signal recognition and affirmation of a post, especially for posts generated by close friends. Their study revealed that the act of 'liking' content on Facebook in particular is more reactionary than on any other platform based on who the poster is. Rather than processing the actual content of the post thoroughly, users were more inclined to provide Likes impulsively in reaction to seeing their friends' posts because they felt obligated to do so to maintain the relationship (Hayes et al., 2016). Another significant reason for using Likes was because people literally liked the content, especially for certain types of content such as

celebrity news, pets, humor, and memes (Hayes et al., 2016). They evaluated the content they were responding to, choosing not to use the affordance if they disliked the content.

Taken together, lightweight interactions on social network sites seem to maintain relationships between relationally close individuals. Facebook's Like button can be used in different ways depending on the type of content because while people sometimes use it to indicate appreciation towards the content, they also use it to show social support towards the content poster (Hayes et al., 2016). The Reactions feature reduces some of the variance behind usage motives because emotions are more fine-grained, allowing people to use the feature more faithfully (i.e. evaluating the content itself). Rather than a one-dimensional expression of emotion, Reactions offers five different emotions—'love', 'haha', 'wow', 'sad', and 'angry'. As such, Reactions can be seen as an extension of the 'Like' feature because it allows users to express their emotions in a more nuanced way, though not as rich as composed communication. This also means that in comparison to traditional one-click "likes", more thought can be given to using particular Reactions when responding to content.

Social Sharing Theory and Self-Presentational Concerns

Social sharing theory posits that experiencing an emotional event stimulates people to share that experience with others. This sharing process occurs independently of emotional valence. For positive emotions, people are motivated to share the episode because talking about it with others brings back pleasurable feelings and sensations (Rimé, 2009). Likewise, negative emotions elicit cognitive work because they usually arise when goals or knowledge are obstructed, initiating a state of cognitive dissonance. People subsequently engage in social interaction with others to

reduce this dissonance (Zech et al., 2004; Rimé, 2009). Upon sharing, listeners provide empathy and support in return. Sharing partners are typically intimates (i.e. family members, romantic partners, etc.) for personal emotional episodes, although colleagues may be significant targets in professional contexts (Rimé, 2009). In turn, self-disclosure of emotions brings people closer together and strengthens social ties. Social sharing is therefore a fundamentally interpersonal process with social consequences.

Though social sharing theory originally applies to face-to-face contexts, recent empirical work has studied this process on SNSs. The shift in contexts poses new research questions to consider, primarily because of invisible and collapsed audiences on social network sites (boyd & Ellison, 2008; Marwick & boyd, 2010). Interactions that occur on public communication channels can reach people who are not visible; for instance, a post restricted to the profile owner's Facebook network can become visible to networks of other users who comment on the original post (Bazarova et al., 2013). In addition, even if a post is directed towards a profile owner's network, not every network member will see it because of algorithms and preferences that select which posts are displayed on feeds--the collection of contributions from one's network (Ellison et al., 2014). To navigate audience multiplicity, users rely on their imagined audience (Litt & Hargittai, 2012) to guide their verbal and nonverbal behavior. As a whole, the core property of SNSs such as the lack of audience cues and their visibility complicate impression management.

Such self-presentational concerns increase especially for private interactions such as social sharing when they gain publicity. First, sharers are less willing to express more positive emotions rather than negative emotions because negative emotions are more private (Finkenauer and

Rimé, 1998) and attached to sensitive information. Expressing positive emotions are also perceived more favorably, which forms the social norm to communicate positive emotions to strangers and acquaintances (Leary, 1995). This tendency was observed on social network sites as well. Positive emotions predominated public interactions on Facebook such as wall posts, while people perceived expressing negative emotions less favorably than positive emotions (Bazarova, 2012).

Recent work has inquired further into how users strategically express their emotions and in what public contexts self-presentational concerns are particularly salient. There have been two different approaches: one is to examine emotional expression patterns against network properties. The other is to study how communication channels that vary in terms of visibility and directedness influence emotional expression. The two approaches are detailed below.

Emotional Expression on SNS

One common approach to studying emotional expression tactics on SNSs is investigating the relationship between social network properties such as size and density and their influence on the expression of positive and negative emotions. Network density refers to what portion of a person's friends are also friends with each other, and indicates how interconnected a person's network is (Burke & Develin, 2016). A densely-knit network consisting of strong ties are likely to be more supportive (Wellman, 1999). Results of several studies on this relationship have been mixed. For example, studies on Facebook found that people share more emotions, both positive and negative, if they have small and dense networks consisting of close friends (Burke & Develin, 2016; Lin et al., 2014). One Twitter study, in contrast, found that while people share

more positive and negative comments in larger networks, negative emotions were shared in sparser networks (Kivran-Swaine & Naaman, 2011) in cases where emotions are expressed in one-to-one interactions with other users (i.e. replies and mentions).

In addition to network properties, others have looked at how different channels within a platform affect emotional expressions. Facebook channels such as status updates, wall posts, and private messaging all differ in terms of participation structure (Herring, 2007), as they afford varying degrees of visibility to the network and directedness. For example, status updates are highly network-visible (by default) because they are broadcast to the entire network; in terms of directedness, they are non-directed because the message is not directed toward any particular person (Bazarova, 2012). Private messages are the opposite, as they are directed towards an individual and not visible to the network (Bazarova, 2012). A key distinction to make is that directed messages tend to be "other-centered" communication, rather than reveal internal aspects about the author. The interaction directedness can moderate self-presentational concerns because they are more apparent in self-centered than other-centered messages. Previous work in this area shows that when people share emotions on private communication channels, they express more intense and less positive emotions than they do on public channels (Bazarova et al., 2013; Bazarova & Choi, 2014; Bazarova et al., 2015). In cases where intimate partners interacted via a public channel, however, they used verbal immediacy (i.e. more personal language) to emphasize relational closeness (Bazarova et al., 2013).

Participation Structure of Reactions and Self-Presentational Concerns

In this section, Reactions are now discussed in more detail as a technical affordance and in light of findings and classification methods used in previous literature. Facebook's Reactions is a one-click tool that allows users to respond to content by specifying the emotion felt towards a post. It is a way to explicitly tell the owner of the post and others in the network who can view that action about how users felt about the content posted. The owner of the post reacted to may vary widely--individuals can react to posts constructed by a Facebook friend or a complete stranger (e.g. a public figure who has a Facebook page) they follow. In giving the Reaction, users can choose from the five different types of emotions (as seen in Figure 1), or choose to "Like" the post; a "like" and a "reaction" cannot both be given. The "like" button", however, is set as the default symbol that appears on posts--users have to hold down on or hover over the "like" button to see the full set of Reactions. For any post, one can see how many people and who "reacted" in aggregate for each of the five Reaction types.

Since emotional expression was previously only possible through channels that afford communication via language (e.g. status updates, wall posts, comments), many studies have concentrated on identifying affect words in participant-constructed posts. Facebook's Reactions is the first relatively widespread textless communication tool to afford emotional expression using pre-defined emotions that range from positive to negative in valence. It is therefore appropriate to first question whether previously observed patterns in sharing positive and negative emotions apply for Reactions as well. This is particularly relevant because one-click Reactions are equally visible traces to the poster of content and the larger audience in the network (Ellison & Vitak, 2015). The audience for Reactions given can be limited to a profile

owner's network, but also be visible to a friends' network if that friend responded to the post in some way. Furthermore, it is uncertain who in the poster's network will actually see the post. Its high publicness and lack of control for audience both make it likely that the norm of expressing positive emotions over negative will also apply in using Reactions. Therefore, I ask:

> **RQ1**: Do participants use Reactions to express positive emotions more frequently than negative emotions?

On the other hand, past interviews with Facebook users emphasize that lightweight interactions such as Reactions are used as a social grooming tool (Hayes et al., 2016). Because Reactions are less exposing interactions compared to verbal communication and only take one click to produce as previous studies have demonstrated (Burke & Kraut, 2014), people may actually perceive this type of disclosure to be relatively shallow and not intimate, even when it involves opening up about one's feelings. Conversely, communicating through lightweight interactions may be considered as intimate and private as engaging in social sharing verbally and expressing less negative emotions, even with friends, may be preferred. As a result, it is worth questioning:

> **RQ2**: Do participants selectively express positive and negative Reactions based on their relational closeness with the receiver?

Reactions are network-visible, but the directedness of emotional expression via Reactions is unclear. Directedness is a necessary aspect to distinguish because the direction of action determines who is brought to focus in the interaction. For example, giving a Reaction to a friend's post, which most likely concerns the friend, brings that friend's thoughts or experiences to focus. But people may also react towards third-party posts (e.g. posts by a public Facebook page that one follows)--in such cases, the target becomes undefined because the Reaction is neither directed toward any specific person, nor completely non-directed (i.e. self-revealing);

rather, individuals react based on what they feel toward the content of the post. It is thus questionable whether people hold self-presentational concerns in using Reactions as they do when posting status updates, which are typically self-centered and highly public posts. Additionally, since norms for expressing positivity exist online, it is interesting to ask whether self-presentational concerns vary across positive and negative Reactions.

RQ3a: Do self-presentational concerns for participants vary when expressing positive (i.e. 'love', 'happy') vs. negative (i.e. 'sad, 'angry') Reactions?

In situations where Reactions are given towards friends' content, underlying self-presentational concerns also may become less salient if emotional expression is seen to facilitate relationship maintenance as social sharing theory suggests. Because Reactions are target-directed though not visible exclusively to interactants, greater perceived relational intimacy between senders and receivers may attenuate underlying self-presentational concerns (Bazarova, 2012; Lin & Utz, 2015). More specifically, this can affect self-presentational concerns for disclosing negative vs. positive emotions as well. Therefore, I asked:

RQ3b: Does reacting to content posted by relationally close individuals influence the participants' self-presentational concerns in that instance?

RQ3c: What effect does responding to relationally close individuals have on the relationship between self-presentational concerns across different Reactions?

Lastly, it is worth examining which types of content people use Reactions for in order to shed light on how lightweight emotional expressions occur on SNSs. Identifying which Reaction types are used for different content can later help explain levels of self-presentational concerns associated with using Reactions and other observed patterns in emotional display. Accordingly, I asked:

RQ4: Do participants use different Reactions based on the content of the post?

In order to examine these RQ's, I performed a study that explores how frequently people use positive and negative Reactions to express their emotions. To delve into whom they send Reactions to and to what extent they hold self-presentational concerns in using Reactions, I ask participants to complete two scales--one that measures relational closeness between the sender and receiver and another that measures impression awareness as an indicator of self-presentational concerns, for each type of Reaction used. Finally, I ask participants to report as many contextual cues as possible to grasp a clearer picture of the exact situation in giving each Reaction. These include specifying the form of post reacted to (e.g. comment, tag, share, general post) and copy and pasting the post directly onto the survey. I also ask them to indicate whether any photos/videos are attached to the post, briefly describe what the photo/video is about if attached, and include any associated captions to account for the lack of direct access to these details.

Methods

Procedure

Prior to collecting data from participants, the study was IRB approved. Study participants (N=62) at a mid-sized Midwestern U.S. research university were then recruited via flyers posted on public buildings throughout campus. Interested participants were instructed to contact the researcher, and they were then given a pre-screener which asked about their frequency in using Facebook and Facebook Reactions and confirmed that they were 18 years old or above in order to be eligible for the study. The pre-screen survey was administered via Qualtrics and consisted of two questions:

1) How often do you use Facebook?

2) How often do you use the Reactions to respond to content on Facebook?

The possible answer choices for each question were: Several times a day, Once a day, Few days a week, Once a week, and Less than once a week. Participants who used Facebook and the Reactions at least "Once a week" or more frequently were considered eligible for participation. Eligible participants were then emailed separately with a brief description of the study and a unique link to the main survey administered via Qualtrics. Prior to beginning the main survey on Qualtrics, participants were shown an online consent form that informed them about the details of the study. Upon survey completion, participants were compensated with a $15 Amazon Gift Card.

Measures

The main survey consisted of two sections. The first aimed to measure how frequently participants used each of the five emotions (love, haha, sad, angry, wow) in Reactions. They were instructed to log into their Facebook account and view their Activity Log to search for the 10 most recent instances in which they had responded to content via a one-click interaction (either Reactions or "Like"). For each instance, they selected the corresponding emotion from a drop-down list containing the five emotions. A "Did not use Reactions" choice was also included in the list to account for the fact that some participants had used the "Like" button instead in their set of the 10 most recent instances. See Appendix E for the full first section of the survey.

The second section of the survey was designed to capture *how* the participants made use of Reactions when they were used. The goal of this section was to provide a more in-depth picture of past cases where participants had used each of the five different Reaction emotions. They

were asked to report two instances of using each of the five emotions, totaling 10 instances. For each instance, they were asked to directly copy/paste the content they had reacted to and provide a brief description of the content in their own words. In addition, participants were asked to indicate if the content poster was a friend, mutual friend, or not a friend and whether there were any photos/videos associated with the content and captions, if applicable. These four questions were included to describe the context of the situation as accurately and detailed as possible.

More specific questions about participant's relational closeness with the content poster and the level of online self-consciousness were presented following the contextual questions. For each reported instance, participants completed two sets of questions from the relational closeness and self-presentational scales. Relational closeness questions came from the Unidimensional Relationship Closeness Scale (URCS), 12 items, $\alpha = 0.96$, and were measured on a 7-point Likert scale. Example items include, "My relationship with A is close" or "A and I disclose important personal things to each other". Questions about self-presentational concerns were adapted from the public self-consciousness scale (Fenigstein et. al), 7-items, $\alpha = 0.98$, and measured on a 5-point scale. Examples of this scale include, "How concerned were you about the way you presented yourself?", "How self-conscious were you about the way you might look in your reaction?" See Appendix F for the full breakdown of the second section of the survey.

Data Preparation

Before conducting analyses on collected data, it is important to mention how each emotion type was evaluated for its degree of sentiment (positive/neutral/negative) using Stanford NLP's sentiment analysis model and characterized accordingly. Categorization of each Reaction by

valence is a common way of distinguishing between different reactions in the existing emotion literature. This also establishes a consistent framework for reference in the analyses and discussion sections of this study. The model has five possible classes of sentiment classification: very negative, negative, neutral, positive, and very positive. Classification of each emotional word is expressed in terms of posterior probability over the five labels. Each Reaction was classified based on the category with the highest corresponding probability (in percentage).

Emotion	**Category**	**Top posterior probability of each Reaction (in percentage)**
Love	Very Positive	92%
Haha	Neutral	63%
Sad	Negative	88%
Angry	Negative	75%
Wow	Positive	66%

Table 1. Valence of Emotion Types

Based on the model results, the positive Reactions refer to ‘love’ and ‘wow’, while ‘sad’ and ‘angry’ count as negative Reactions. ‘Haha’ is considered a neutral Reaction.

Coding Procedure

To answer the question of whether participants use different Reactions based on content (RQ4), a one-level coding scheme was adapted from Ozanne et al. (2017) and further developed iteratively to capture the contexts in which people reacted to a post. Two coders applied the coding scheme to a random sample (n=51) chosen from the entire data set consisting of 476 instances. The agreement was calculated for this sample set and resulted in a Cohen's kappa reliability score of $\kappa = 0.69$. Disagreements were then resolved by the two coders through discussion for the lowest occurring category to recalculate the kappa. Resolving these disagreements raised the previous score to $\kappa = 0.84$. The rest of the disagreements were resolved later as well for cross-tabulation.

Results

Positive vs. Negative Reactions

The first research question (RQ1) aimed to investigate whether positive Reactions would be more frequently used than negative Reactions. Partial evidence for this prediction was found; positive Reactions (e.g. 'love' and 'wow') accounted for 62% of the total uses, while negative Reactions ('angry' and 'sad') accounted for ~19.6%. In particular, 'love' was used for 50% of the total cases in which Reactions were used (449), and 'wow' was used only for 12% of the total. Negative emotions were used sparingly as expected, with 'angry' only used for 6.7% of the total instances. One interesting finding is that 'sad' was used more frequently than 'wow', a positive Reaction, though there is only a slight discrepancy between the two percentages.

Emotion	Frequency	Percentage (out of 449)
Love	224	50%
Haha	83	18.5%
Sad	58	12.9%
Wow	54	12%
Angry	30	6.7%
Did not use Reactions	171	
Total	620	

Table 2. Emotion types reported in the participant's 10 most recent uses of Reactions

Self-Presentation and Relational Closeness across Emotions

For the remaining research questions, I analyzed the data using logistic mixed model regressions. Participant was modeled as a random effect as each participant reported on multiple potential emotions and therefore observations within a participant were not independent.

First, I investigated whether or not the relational closeness between participants and the content poster differed across positive and negative Reactions disclosed (RQ2). While prior work suggests that negative emotions may be used with more strong ties, our results only indicated a marginally significant relationship between relational closeness and valence, $F(4, 342) = 2.12$, $p = .08$. Further exploration of the relationship using contrast tests reveals that relationship values

with individuals differed statistically when the negative Reaction ‘sad’ (M = 3.88, SE = 0.21) was expressed as opposed to the positive Reaction ‘love’ (M = 4.50, SE = 0.17), $t(342) = -2.57$, $p = .01$. In contrast to the expectation that negative emotions are generally used with intimates, ‘sad’ was used more indiscriminately compared to ‘love’. Except for ‘sad’, however, ‘angry’ and ‘love’ were used with closer ties than other Reactions. This result is in line with previous research that suggests more intense emotions are shared individually with specific intimates. Overall, the different types and valence of emotions did not influence whether or not they were expressed to close individuals via Reactions.

In addition, RQ3a questions the effect of emotional valence on self-presentational concerns in expressing the five Reaction types. In other words, I wanted to see if, for example, people were more or less concerned about their online impression depending on the valence of Reactions used. I found that the valence was significantly related to the participants’ public self-consciousness when reacting, $F(4, 313) = 4.18$, $p < .01$. Compared with the most positive Reaction ‘love’ (M = 2.43, SE = 0.14), self-presentational concerns were lower for reacting with a relatively more neutral Reaction ‘haha’ (M = 2.14, SE = 0.14), $t(313) = -2.98$, $p = .03$. Similarly, concerns were lower for positive Reaction ‘wow’ (M = 2.11, SE = 0.14), $t(313) = -3.29$, $p < .01$. The negative Reactions, however, had no significant differences in self-presentational concerns when compared to ‘love’.

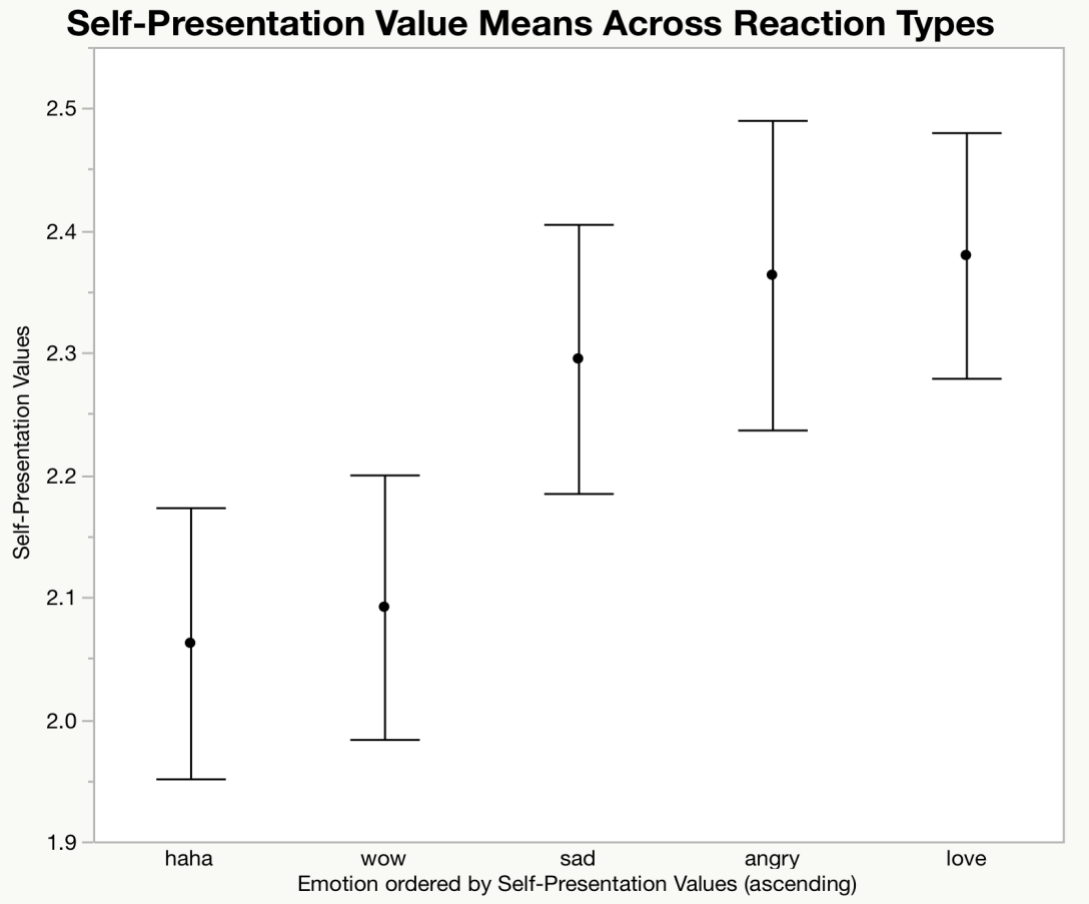

Figure 2. Means and SEs of self-presentational concerns for different Reaction types

RQ3b asks whether responding to relationally close individuals' content is associated with participants' self-consciousness. The degree of relational closeness does exhibit a significant association with self-presentational concerns, $F(1, 322) = 4.76$, $p = .03$. More specifically, self-presentational concerns were reported to be greater when perceived relational closeness was lower ($b = -0.05$, $SE = 0.02$).

Finally, although the predictor variables of Reaction type and relational closeness influence self-presentational concerns when individually examined, there was no significant interaction between the two, $F(4, 314) = 0.37$, $p = .83$ (RQ3c). In other words, for example, reacting with a

'love' to a close individual's content as opposed to a more relationally distant person did not particularly change the level of self-presentational concerns participants held when expressing 'love'.

Contexts in using different Reactions

To better understand in what types of contexts people use different Reactions (RQ4), I brainstormed the possible situations in which people might react to posts. Because people react based on post attributes (i.e. what the post is about), I decided that the post content was an interesting aspect to investigate and should be used to differentiate between instances of using each Reaction. I examined the directly copied and pasted post itself, the brief descriptions that the participants provided, and any associated captions in order to classify each post content as accurately as possible. Four different categories were created to describe the content—entertainment, information/discovery, self-identification, and bonding (see Table 3 below).

Code	Categories	Example
Entertainment	Posts are about a variety of things that range from fashion, food, music, electronics, and TV shows and is usually posted by a third-party source.	*Content: tag in a comment from a page* *Description: a page which posts memes; thhis [sic] one was one about wine from a popular web comic* *Caption: (my name)*

Information/Discovery	Posts that have informational value and are constructed with the intention of imparting knowledge. The information imparted is often about local/worldwide and current/past events.	*Content: It was a daily article about how freshman 15 jokes are harmful*
Self-Identification	Posts that are directly associated with the participant, either by reflecting some personal aspect of the self in a visual (e.g. a photo of the person tagged in it) or textual (e.g. a post that describes a past event that the participant was previously a part of) manner.	*Content: photo of two friends on university campus during move in week* *Description: (photo from a year ago with me tagged in it, shared from fb memories)* *Caption: can't believe this was a year ago!*
Bonding	Posts that are about friends and usually constructed by a friend or mutual friend. A common example is posts sharing, exchanging, discussing personal life events, updates, congratulatory posts, etc.	*Content: I haven't been on here much lately, but had to finally get out of that winter coat. lol.*

Table 3. Coding scheme for post content

At a high level, there was a relationship between using different Reactions for posts containing different content, $\chi^2 = 21.472$, df = 12, $p < .05$, N = 52. Results for each Reaction type are

reported below, but given the relatively small sample size, the significance of the relationship should be viewed with caution.

For negative Reactions, entertainment, information/discovery, and bonding were the most frequently occurring categories. “Sad” was used the most for entertainment (36.36%), followed by information/discovery (27.27%) and bonding (27.27%). In contrast, “angry” was most frequently used for bonding (37.5%) and information/discovery (37.5%). Interestingly, both negative Reactions were used very sparsely for self-identified content. One possible reason for this may be that self-identified content usually occurs in the form of tags. Participants may be inclined to portray themselves in a favorable way by associating themselves with positive emotions (Cialdini & Nicholas, 1989) or because only positive life events are shared on Facebook in the first place (Sas et al., 2009).

Positive Reactions, on the other hand, were largely used to respond to content posted by network members. Bonding accounted for 58.33% of total cases for ‘love’ and 50% of total cases for ‘wow’. ‘Wow’ was particularly used for greater proportions of entertainment (25%) and information/discovery (25%), while ‘love’ was rarely used for these categories. Self-identification (25%) appeared more frequently instead for ‘love’.

Lastly, the only neutral Reaction ‘haha’ was used primarily for reacting to entertainment (77.78%) and for bonding secondarily (22.22%).

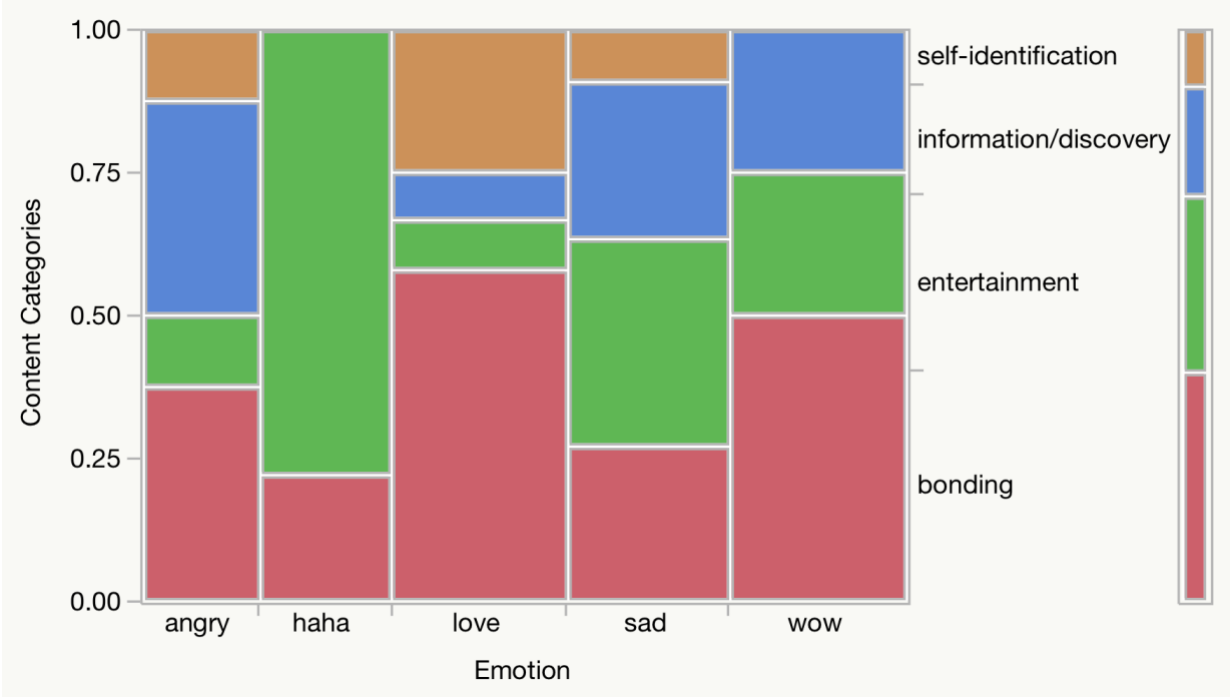

Table 4. Emotion * content categories cross-tabulation

Discussion

Examining emotional expression patterns in Facebook's Reactions usage extends and complements prior related research. On the whole, this study helps us more deeply understand the meanings and values people ascribe to giving lightweight interactions, but also about what it means to engage in social sharing via this communication channel. Reactions seem to sustain social norms for emotional expression and self-presentational concerns as observed in previous studies. Yet people also use the feature more widely with others regardless of their relational intimacy with receivers of the Reaction, suggesting a potential shift in the meanings behind using one-click affordances.

First, it was found that negative Reactions were used less frequently than positive Reactions, consistent with existing literature (Lin et al., 2014; Bazarova et al., 2013; Bazarova & Choi, 2014; Bazarova et al., 2015; Kramer & Chung, 2011; Sas et al., 2009). Expressing positive

emotions create more favorable impressions (Leary, 1995) and evokes feelings of connectedness and entertainment (Sas et al., 2009) between friends. The greater amount of positive emotions may also be explained further by the private/public nature of the interaction. Giving Reactions is a public activity with a comparable structure to wall posts, in which the audience is ill-defined and invisible in the moment. This may enforce the social norm of expressing the most publicly acceptable feelings when reacting to posts.

With regard to receivers of Reactions, participants did not use emotional displays selectively depending on how close they were with the targets. In other words, though negative emotions were expressed less as a whole, people used all types of Reactions independent of the valence and relationship with receivers. This suggests that unlike 'Likes', which people use in obligation to provide feedback for their friends (Hayes et al., 2016), Reactions may be appropriated more faithfully in response to the emotions elicited by the content. Negative Reactions thus may not be exclusively used with relationally close individuals, or strong ties, to provide social support and maintain relationships (Burke & Develin, 2016), but when the content is literally interpreted (Hayes et al., 2016), although there may be various motivations and purposes behind the act (Smock et al., 2011). Future research studies could address what motivates users to use Reactions widely with receivers regardless of relational intimacy. In addition, relational intimacy may have not played a significant role in controlling expression behavior because emotional displays via Reactions are not rich and do not communicate any personally relevant information to either the network or the target. Because the focus is other-directed and on providing feedback to the owner of the post or the post itself, positivity norms (i.e. sharing less negative emotions with weaker ties) may have been irrelevant. Such results indicate that Reactions are not solely conceived as a social support tool.

Self-presentational concerns in giving emotional feedback

Prior research on online social sharing has only studied the self-presentational concerns from the sharers' perspective and not the receivers'. The present study reveals that self-presentational concerns exist even when giving emotional support; consistent with results for RQ1, people are self-aware in providing emotional support because Reactions is a public communication channel. Though concerns were not necessarily higher for negative than positive emotions, they were higher in using a more neutral Reaction, 'haha', when compared to 'love'. This could be because 'haha', which mimics laughing in face-to-face contexts, can only be used in a restricted sense compared to 'love'. 'Love' can be expressed towards the post content or the owner of the post; for example, one can 'love' a friend's wall post because of the message it conveys, but also simply because of a particularly strong bond one has with that friend in real-life. In contrast, 'haha' signals that the post is entertaining in and of itself.

Self-presentational concerns for using certain types of Reactions, however, do not appear to differ according to relational intimacy. Although participants are generally more self-conscious of their behavior in using Reactions with relationally distant targets, the different emotion types do not influence their concerns. For example, there are no differences between self-presentational concerns in expressing negative emotions (i.e. 'sad' and 'angry') with friends vs. strangers. This suggests that sharing negative emotions are only seen as private to a certain extent; when shared via one-click tools, self-presentational motives remain unchanged either because sharing occurs in a public context or exchanging one-click interactions with friends are considered as no more intimate than with strangers.

Using Reactions for different content

To provide more insight on how different Reactions are used in various contexts and more detailed explanations for the observed results, I examined distinct types of content each of the Reactions was used for. Results show that participants used negative Reactions mainly for personally irrelevant, or non-intimate content posted by third parties on Facebook, though 'angry' was equally used for content posted by network members. Negative emotions were disclosed in contexts where the content itself elicited the emotional response; they were not exactly used to show social support for acquaintances because both 'entertainment' and 'information/discovery' categories capture posts that contain information about public findings and events rather than personal episodes. This finding extends previous arguments that lightweight tools such as Reactions are generally used less because they provide fewer interpersonal benefits compared to composed communication, such as comments or messages (Burke & Kraut, 2014). Such contextual descriptions of use help us better understand why negative emotions were not necessarily used more with familiar targets, but more to present feelings, personal interests, and values (Ozanne et al., 2016) that are in line with an actual image of themselves on SNSs (Back et al., 2010).

In contrast, positive Reactions were used in situations where friends posted about their personal experiences. This effect is weaker for 'wow', as 50% of the cases were reactions to information/discovery and entertaining posts, but more prominent for 'love' along with self-identification. Participants may respond with positive emotions perhaps because receivers are overall more satisfied when listeners provide positive feedback on network-visible channels (Bazarova et al., 2013). The positive Reaction 'love' for self-associated content in particular, is also consistent with self-presentational desires to appear in a favorable light (Leary, 1995).

Sharers on SNSs are more inclined to post positive emotional experiences publicly (Burke & Develin, 2016; Bazarova et al., 2015; Lin & Utz, 2015), which in turn, elicits positive feedback from those in the network. Positive Reactions, especially 'love', and the "Like" button are used in a similar sense perhaps because the two are the most similar emotions as well.

The only neutral emotion 'haha' was used almost completely for entertaining content posted by public pages, groups, and figures on Facebook. It was also used for instances in which acquaintances posted humorous content. When 'haha' is expressed for low personally-relevant content generated by users outside the network, it is the most authentic representation of how reactions are given off in person (Leary, 1995). These situations convey the "true" image of the self most because people are choosing to be affiliated with the content directly and only acting in their own interests (Baumeister, 1986). In other words, reacting with 'haha' can be comparable to searching and looking at entertaining content for personal enjoyment in private. The publicity gained when performed via Reactions, however, can help explain the higher self-presentational concerns observed in RQ3a.

As a whole, our results show that emotional expression patterns are preserved when using Reactions, with negative Reactions being used less frequently than positive Reactions. Relational intimacy, however, does not largely matter when using Reactions, as negative Reactions are not necessarily used with intimates. One explanation for this is that expressing emotions through Reactions can only reveal so much about people's feelings that people may be negligent about their relationship with the content posters. Self-presentational concerns for each Reaction also does not differ depending on relational intimacy, implying that people may be focused more on the content of the post and the message it conveys. Despite the insignificant effects of relational intimacy, it is interesting to find that self-presentational concerns are still prevalent both when

using the feature in general and differ depending on the valence of emotion. This challenges previous claims made in literature about how self-presentational concerns in using lightweight *feedback* mechanisms such as Reactions may not exist because emotions expressed this way are not personally relevant (Bazarova et al., 2014; Bazarova, 2015). Rather, people seem to be concerned with how showing interest in one piece of individual content will impact their online image. Because Reactions are an enriched set of emotions, using it to give feedback for a post may disclose feelings and thoughts more precisely compared to the previous "Like" button. Lightweight mechanisms such as Reactions should therefore be included when discussing SNSs features and affordances that complicate self-presentation.

Limitations and Future Work

The present study opens up new avenues for future research, specifically for giving emotional feedback via lightweight interactions. For example, what are the motivations behind using Reactions in general? Interview studies show that Facebook's 'Like' button are used to signal social support, acknowledge viewership, and maintain existing relationships (Ozanne et al., 2016; Hayes et al., 2016; Burke & Kraut, 2014; Burke & Develin, 2016). This study makes no strong claims about the exact purposes behind using Reactions, but only infers what types of content are likely to stimulate usage. It is also worthy to distinguish the motivations and purposes that drive expressions toward content generated by relationally distant individuals or strangers, such as mutual friends' or informational/discovery and entertainment posts mentioned in this study. One-click tools have only been discussed for their effects on strengthening or maintaining social ties, but not with respect to their influence in constructing an online self-image. Furthermore, reasons for using Reactions over Likes (or vice versa) would also be an interesting line of research to examine.

Past studies on online social sharing have examined the degree of satisfaction with feedback that sharers receive (Bazarova et al., 2015; Scissors et al., 2016). Findings show that sharers are satisfied when they receive a greater number of Likes and especially when those Likes come from friends. The same questions can be asked for Reactions—do people who share care about whether or not they receive Reactions, and who they receive Reactions from? How do sharers perceive receiving Reactions for their posts—is it as meaningful as receiving comments and messages for social support? How using these Reactions, in turn, influence the strength of social ties long-term may also be another topic to research, as Reactions are more detailed and specific expressions of emotions than the "Like" button.

Lastly, the present study probed what types of content elicit Reactions, but not what emotions were expressed in the original posts. Previous research shows that sharing negative emotions receive less lightweight responses, while positive emotions garner more 'likes' (Burke & Develin, 2016). Identifying what feelings were initially expressed can provide a more in-depth picture of how the different emotions were used for bonding, self-relevant content, information/discovery, and entertainment content. For example, knowing that negative emotions were expressed in bonding posts that received the 'angry' Reaction can reveal what message the sender intended to communicate to the receiver.

Conclusion

When people browse their Newsfeeds on SNSs, they come across many posts that elicit emotions. The present study demonstrates that in expressing elicited emotions via Reactions, people hold self-presentational concerns more for certain emotions such as 'haha' than others. On the other hand, people use Reactions regardless of the valence and relational intimacy with

the receiver of the cue; Reactions are not always given exclusively to certain network members over others. The types of content different Reactions are used for further illustrate that the while emotion-disclosing tool is used to show social support at times, it is also used more widely with informational and entertaining posts to express personal opinions, feelings, and values.

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Appendix

Appendix A

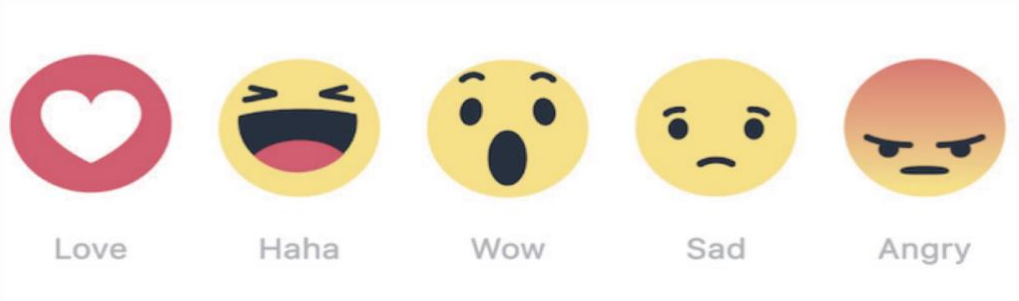
Recruitment Flyer

Research Study

Faceook Reactions and Self-Presentation

School of Communications, IRB #00205335

Professor Darren Gergle, PI



Participation in the study involves completing an online Qualtrics survey about your use of the Facebook Reactions feature. The study will last approximately 20-30 minutes. Participants must be 18 years or older and frequent Facebook users. You will be paid $15 for your participation.

If interested in participating, please contact Minkyong at:
minkyongkim2018@u.northwestern.edu.

FB Reactions Study
Minkyong Kim
minkyongkim2018@u.
northwestern.edu

Appendix B

Online Consent Form

Title of Research Study: Facebook Reactions study

Investigator: Prof. Darren Gergle

Supported By: Northwestern University

Why am I being asked to take part in this research study?

We are asking you to take part in this research study because we are trying to learn more about how people use Facebook's Reactions feature, and you are a frequent user of Facebook.

What should I know about a research study?

· Someone will explain this research study to you.

· You can choose not to take part.

· You can agree to take part and later change your mind.

· Your decision will not be held against you.

· You can ask all the questions you want before you decide.

Who can I talk to?

If you have questions, concerns, or complaints, or think the research has hurt you, talk to the student researcher, Minkyong Kim, at:

Minkyong Kim

minkyongkim2018@u.northwestern.edu

(213) 304-7580

This research has been reviewed and approved by an Institutional Review Board ("IRB"). You may talk to them at (312) 503-9338 or mailto:irb@northwestern.edu if:

· Your questions, concerns, or complaints are not being answered by the research team.

- You cannot reach the research team.
- You want to talk to someone besides the research team.
- You have questions about your rights as a research participant.
- You want to get information or provide input about this research.

Why is this research being done?

The purpose of this research is to learn more about how people make decisions to use Reactions, an emotion disclosing feature, on Facebook. We are interested in how people like yourself think of using this feature as your Reactions to content can be viewed by those in your network.

How long will the research last?

Your participation in this study will last approximately 30 minutes.

What happens if I say "Yes, I want to be in this research"?

If you agree to participate, you will be asked to complete an online survey based on data from your personal Facebook account. You will be asked to login and view past instances of using the Reactions feature in your Activity Log to answer survey questions about them. You will also be asked to copy/paste the content you have reacted to, but may choose not to do so if you find that it may be potentially embarrassing or exposing. We expect that completing the activity will take a total of thirty minutes.

What happens if I do not want to be in this research?

You can decide not to participate in this research at any time and it will not be held against you.

What happens if I say "Yes", but I change my mind later?

You can decide not to participate in this research at any time and it will not be held against you. To do so, simply exit the survey. Any data collected will not be saved.

Is there any way being in this study could be bad for me?

There is a risk of discomfort, as the study requires you to share personal information from your Activity Log and copy/paste content that you have reacted to in the past. You can skip any question you do not wish to answer for content that may be potentially embarrassing or exposing and choose less recent instances of using Reactions if needed, or exit the survey at any point.

What happens to the information collected for the research?

This survey is hosted by Qualtrics and involves a secure connection. Terms of service, addressing confidentiality, may be viewed at http://www.qualtrics.com/research-suite/. Upon receiving results of your survey, any possible identifiers will be deleted. You will be identified only by a unique subject number. All information will be kept on a password protected computer only accessible by the research team. The results of the research study may be published, but your name will not be used.

What else do I need to know?

If you agree to take part in this research study, we will pay you with a $15 for your time and effort.

Consent

If you want a copy of this consent for your records, you can print it from the screen.

If you wish to participate, please click the "I Agree" button and you will be taken to the survey.

If you do not wish to participate in this study, please select "I Disagree".

Appendix C

Email Templates for Ineligible and Eligible Participants

Ineligible participants:

Hi (Name of participant),

Thank you for your interest in participating in the Facebook Reactions study (IRB study title: The role of self-presentational concerns in disclosing emotional reactions via Reactions on Facebook, IRB #00205335, Principal Investigator: Darren Gergle). Based on your answers to the pre-screen survey, you are not eligible to participate in this online research study. We appreciate your interest once again.

Best,
Minkyong

Eligible Participants:

Hi (Name of participant),

Thank you for your interest in participating in the Facebook Reactions study. Based on your answers to the pre-screen survey, you are eligible to participate in this online research study. Participation in this study will involve re-visiting any previous activity of using the Reactions feature on Facebook and answering questions about them. The online survey will last approximately 30 minutes. To access the survey, please use the link provided below.

(Link)

This link is unique. Please do not forward it.

Upon completion, you will be compensated $15 via Amazon Gift Card for your time and effort. Your participation is greatly appreciated.

Thank you!

Best,
Minkyong

Appendix D

Pre-Screening Survey

Start of Block: Default Question Block

Q1 How often do you use Facebook?

- o Several times a day (1)
- o Once a day (2)
- o Few days a week (3)
- o Once a week (4)
- o Less than once a week (5)

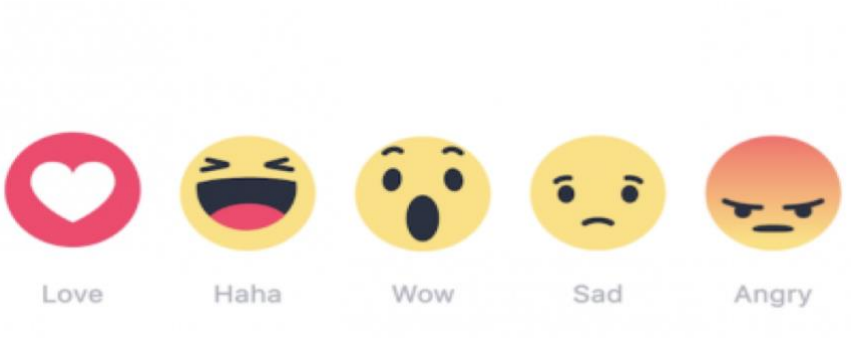
Q2 How often do you use the Reactions feature to respond to content on Facebook?

- o Several times a day (1)
- o Once a day (2)
- o Few days a week (3)
- o Once a week (4)
- o Less than once a week (5)

Appendix E

Main Survey Part 1

For the first part of the survey, please log into Facebook and browse your Activity Log (located on the top right-hand corner of your profile) to report your 10 most recent instances of using Reactions. Select the emotion you have used in the order they appear. You may find it helpful to open up your Activity Log on separate tab beside this survey. When you open up your Activity Log, select the "Likes" filter on the left to only view posts that you have both liked and reacted to in the past. An image of the Reactions feature is shown below for reference.



1.
- o Love (1)
- o Haha (2)
- o Wow (3)
- o Sad (4)
- o Angry (5)
- o Did not use Reactions (6)

2.
- o Love (1)
- o Haha (2)
- o Wow (3)
- o Sad (4)
- o Angry (5)
- o Did not use Reactions (6)

3.
- o Love (1)
- o Haha (2)
- o Wow (3)
- o Sad (4)
- o Angry (5)

o Did not use Reactions (6)

4.
o Love (1)
o Haha (2)
o Wow (3)
o Sad (4)
o Angry (5)
o Did not use Reactions (6)

5.
o Love (1)
o Haha (2)
o Wow (3)
o Sad (4)
o Angry (5)
o Did not use Reactions (6)

6.
o Love (1)
o Haha (2)
o Wow (3)
o Sad (4)
o Angry (5)
o Did not use Reactions (6)

7.
o Love (1)
o Haha (2)
o Wow (3)
o Sad (4)
o Angry (5)
o Did not use Reactions (6)

8.
o Love (1)
o Haha (2)
o Wow (3)
o Sad (4)
o Angry (5)
o Did not use Reactions (6)

9.
o Love (1)
o Haha (2)
o Wow (3)
o Sad (4)
o Angry (5)
o Did not use Reactions (6)

10.
o Love (1)
o Haha (2)
o Wow (3)
o Sad (4)
o Angry (5)

- Did not use Reactions (6)

Page Break

Appendix F

Main Survey Part 2

Start of Block: Love (Part 2)

View the two most recent instances of using the emotion 'love' from your activity log.

Indicate the type of content you reacted to for the first instance. Please select all that apply (i.e. if you reacted to a photo/video that you were tagged in, select 'tag' and 'general post').

- ☐ Comment (1)
- ☐ Tag (2)
- ☐ Share (4)
- ☐ General post (includes status updates, photo/video uploads) (3)

Is there any photo/video associated with the content?

- o Yes (1)
- o No (2)

Indicate the type of content you reacted to for the second instance. Please select all that apply (i.e. if you reacted to a photo/video that you were tagged in, select 'tag' and 'general post').

- ☐ Comment (1)
- ☐ Tag (2)
- ☐ Share (4)
- ☐ General post (includes status updates, photo/video uploads) (3)

Is there any photo/video associated with the content?

- o Yes (1)
- o No (2)

Answer the following questions for the two most recent instances of using 'love'. Copy text into their corresponding labels (content, description, caption).

o Whose content did you react to for the first instance? Type the first name of the individual. (1)

_____

o Copy and paste the content of the first post you reacted to. If there is a photo/video associated with the content, briefly describe what the photo/video is about and include captions as appropriate. (2)

_____

o Whose content did you react to for the second instance? Type the first name of the individual. (3)
_____

o Copy and paste the content of the first post you reacted to. If there is a photo/video associated with the content, briefly describe the photo/video and include captions as appropriate. (4)

_____

Select one of the following statements that best describes your relationship with ${Q2/ChoiceTextEntryValue/1}.
o He/she is my friend on Facebook. (1)
o He/she is a mutual friend on Facebook. (2)
o He/she is not my Facebook friend. (3)

Select one of the following statements that best describes your relationship with ${Q2/ChoiceTextEntryValue/3}.
o He/she is my friend on Facebook. (1)
o He/she is a mutual friend on Facebook. (2)
o He/she is not my Facebook friend. (3)

Answer the following questions about your relationship with ${Q2/ChoiceTextEntryValue/1}.

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
My relationship with ${Q2/ChoiceTextEntryValue/1} is close. (1)	o	o	o	o	o	o	o
When we are apart, I miss ${Q2/ChoiceTextEntryValue/1} a great deal. (2)	o	o	o	o	o	o	o
${Q2/ChoiceTextEntryValue/1} and I close important personal things to each other. (3)	o	o	o	o	o	o	o
${Q2/ChoiceTextEntryValue/1} and I have a strong connection. (4)	o	o	o	o	o	o	o

${Q2/ChoiceTextEntryValue/1} and I want to spend time together. (5)	o	o	o	o	o	o	o
I'm sure of my relationship with ${Q2/ChoiceTextEntryValue/1}. (6)	o	o	o	o	o	o	o
${Q2/ChoiceTextEntryValue/1} is a priority in my life. (7)	o	o	o	o	o	o	o
${Q2/ChoiceTextEntryValue/1} and I do a lot of things together. (8)	o	o	o	o	o	o	o
When I have free time I choose to spend it alone with ${Q2/ChoiceTextEntryValue/1}. (9)	o	o	o	o	o	o	o
I think about ${Q2/ChoiceTextEntryValue/1} a lot. (10)	o	o	o	o	o	o	o
My relationship with ${Q2/ChoiceTextEntryValue/1} is important in my life. (11)	o	o	o	o	o	o	o
I consider ${Q2/ChoiceTextEntryValue/1} when making important decisions. (12)	o	o	o	o	o	o	o

Answer the following questions about your relationship with ${Q2/ChoiceTextEntryValue/3}.

	Strongly Disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree

My relationship with ${Q2/ChoiceTextEntryValue/3} is close. (1)	o	o	o	o	o	o	o
When we are apart, I miss Q2/ChoiceTextEntryValue/3} a great deal. (2)	o	o	o	o	o	o	o
${Q2/ChoiceTextEntryValue/3} disclose important personal things to each other. (3)	o	o	o	o	o	o	o
${Q2/ChoiceTextEntryValue/3} and I have a strong connection. (4)	o	o	o	o	o	o	o
{Q2/ChoiceTextEntryValue/3} and I want to spend time together. (5)	o	o	o	o	o	o	o
I'm sure of my relationship with ${Q2/ChoiceTextEntryValue/3} (6)	o	o	o	o	o	o	o
${Q2/ChoiceTextEntryValue/3} is a priority in my life. (7)	o	o	o	o	o	o	o
${Q2/ChoiceTextEntryValue/3} and I do a lot of things together. (8)	o	o	o	o	o	o	o
When I have free time I choose to spend it alone with ${Q2/ChoiceTextEntryValue/3}. (9)	o	o	o	o	o	o	o
I think about ${Q2/ChoiceTextEntryValue/3} a lot. (10)	o	o	o	o	o	o	o

My relationship with ${Q2/ChoiceTextEntryValue/3} is important in my life. (11)	o	o	o	o	o	o	o
I consider ${Q2/ChoiceTextEntryValue/3} when making important decisions. (12)	o	o	o	o	o	o	o

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Think back to how you felt when you encountered and reacted to this content: ${Q2/ChoiceTextEntryValue/2}.

Please indicate the extent to which you felt highly aware of yourself in making the decision to react to the previously shown content.

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I was concerned about my style of reacting to content. (1)	o	o	o	o	o
I was concerned about the way I would be presented online. (2)	o	o	o	o	o
I was self-conscious about the way I would Iook online. (3)	o	o	o	o	o
I was worried about making a good impression. (4)	o	o	o	o	o

I was concerned about what other people would think of me. (5)	o	o	o	o	o
I was aware of my online appearance in reacting to the content. (6)	o	o	o	o	o

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Think back to how you felt when you encountered and reacted to this content: ${Q2/ChoiceTextEntryValue/4}.

Please indicate the extent to which you felt highly aware of yourself in making the decision to react to the previously shown content.

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I was concerned about my style of reacting to content. (1)	o	o	o	o	o
I was concerned about the way I would be presented online. (2)	o	o	o	o	o
I was self-conscious about the way I would Iook online. (3)	o	o	o	o	o

I was worried about making a good impression. (4)	o	o	o	o	o
I was concerned about what other people would think of me. (5)	o	o	o	o	o
I was aware of my online appearance in reacting to the content. (6)	o	o	o	o	o

End of Block: Love (Part 2)

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Same set of questions were repeated for each of the remaining four Reactions