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Abstract

The merging of audiences in social media and the variety of participation structures they present, including different audience sizes and interaction targets, pose questions about how people respond to these new communication situations. This research examined self-presentational and relational concerns through the analysis of language styles on Facebook. The authors collected a corpus of status updates, wall posts, and private messages from 79 participants. These messages varied in certain characteristics of language style, revealing differences in underlying self-presentational and relational concerns based on the publicness and directedness of the interaction. Positive emotion words correlated with self-reported self-presentational concerns in status updates, suggesting a strategic use of sharing positive emotions in public and nondirected communication via status updates. Verbal immediacy correlated with partner familiarity in wall posts but not in private messages, suggesting that verbal immediacy cues serve as markers to differentiate between more and less familiar partners in public wall posts.

Keywords

self-presentation, language style, functional words, social networking site, Facebook, LIWC, emotion

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The rise and wide adoption of social networking sites (SNSs) has opened new opportunities for creating and maintaining social connections. These technologies reach hundreds of millions of users worldwide, many of whom contribute personal content daily and share it with members of their social networks (Facebook, 2012). These “deeply social” technologies (Gasiorek, Giles, Holtgraves, & Robbins, 2012) are of great interest to researchers because they enable interactions with different audiences and different availability of nonverbal cues that can serve as special lenses for inquiry into language and social behaviors in both mediated and nonmediated environments (Walther, 2004, 2012).

New technologies also draw research attention because they provide “new or previously rare contexts for information expression and engagement” (Yzer & Southwell, 2008, p. 8). One of the defining characteristics of SNSs is users’ ability to share personal content with a wide range of people, which merges interpersonal and mass communication into “masspersonal communication” (O’Sullivan, 2005). Although this sometimes happens in nonmediated contexts, for example, when a personal story is shared with a large crowd at a party, SNSs often provide explicit channels for mass access to personal content. Such wide reach and potential diffusion of information in a network not only create opportunities for acquiring social connections and resources (Ellison, Vitak, Steinfield, Gray, & Lampe, 2011) but also pose a challenge for balancing self-presentational strategies and privacy concerns in the presence of multiple audiences (Krämer & Haferkamp, 2011). Faced with the problem of context collapse, a collision of various audiences into one (boyd, 2008; Marwick & boyd, 2010), people must navigate both different SNS features and different audiences to fulfill their needs for self-expression and sociality, which are among the primary motivations for participating in online communities (Lampe, Wash, Velasquez, & Ozkaya, 2010; Papacharissi & Mendelson, 2011).

We approach the problem of self-presentational and relational management through the analysis of language style characteristics, including the relative use of linguistic categories such as functional and emotion words using the LIWC (Linguistic Inquiry and Word Count) text analysis program (Pennebaker, Booth, & Francis, 2007). These style indicators give psychological cues to people’s cognitive and emotional states, motivations, and social relationships (for review, see Mehl & Pennebaker, 2003; Tausczik & Pennebaker, 2010). By analyzing language style characteristics, this research seeks to enhance our understanding of how individuals employ language style to navigate multiple audiences in social media with multiple affordances.

Multiple Audiences and Managing Self-Presentational and Relational Concerns on SNSs

Audiences are no longer bounded by space and time in social media. Not only do individuals from different social circles and life periods, from close friends to total strangers, collapse into one network on many SNSs (Gilbert & Karahalios, 2009; Parks, 2010), but shared information can easily move beyond its intended or nominal

targets. In her dissertation work, boyd (2008) described the complexities of *networked publics* resulting from the intersection of people, technologies, and practice, which lead to invisible audiences and collapsed contexts. Audiences are invisible and poorly defined because an individual's online activities and content can be redistributed to people who are not copresent or visible. For example, a communication episode initially restricted to a profile owner's Facebook network becomes accessible to the networks of other users who comment on the profile owner's message, even though members of those networks may not know the profile owner.¹ In other words, as content is added and discussed on Facebook, new audiences are added as well. The audience for Facebook wall posts is nominally more well defined: They are directed at a single receiver and normally visible to both the sender's and the receiver's networks. However, not every member of the networks will see a given post because of the limits of human attention and the algorithms Facebook uses to choose which activity to feature from a users' social network. Thus, even in this case, the actual audience of a wall post is ill-defined and invisible. And though some SNSs (e.g., Google+) facilitate audience segmentation, on balance, the structure of sites such as Facebook and Twitter facilitates an overlap in social networks, resulting in an audience composed of individuals belonging to diverse and sometimes conflicting social spheres (Marwick & boyd, 2010).

Such context collapse complicates self-presentation management because as people strive to control others' impressions, they have to adapt their verbal and nonverbal behaviors to these varying audiences. Models of self-presentation (Leary, 1995; Leary & Kowalski, 1990) deconstruct it into two components: impression motivation, referring to the desire to control others' impression of the self, and impression construction, referring to strategies used for creating a desired impression. Krämer and Haferkamp (2011) argue that multiple and invisible audiences in SNSs affect the process of impression construction because they require addressing different target values simultaneously. According to Leary and Kowalski's (1990) model, people adapt their self-presentation to target values, "the perceived values and preferences of significant others" (p. 41), by selecting aspects of self most appropriate for the particular addressee in the particular circumstances. Showing different social sides of the self or "packaging" oneself (Leary, 1995) to meet the desired expectations of the audience is not possible, however, in one-to-many communication on SNSs with overlapping audiences (Krämer & Haferkamp, 2011).

The question, then, is how do people navigate diverse audiences to achieve their self-presentational and relational goals in SNSs? Empirical research so far has primarily studied these tensions through the analysis of impression motivation rather than impression construction (e.g., Christofides, Muise, & Desmarais, 2012; Tufekci, 2008; Utz & Krämer, 2009; but see Marwick & boyd, 2010). Less research focuses on aspects of impression construction, understanding the actual strategies through which people construct impressions and manage relationships with multiple audiences on SNSs. For instance, it has been proposed that people adopt simple strategies such as sharing information according to a lowest common denominator principle, making

posts that are acceptable for all members of the network, from bosses to strangers (Hogan, 2010). The present research seeks to identify more nuanced strategies people use to manage their self-presentational and relational concerns in SNSs by comparing the language style characteristics they employ in Facebook interactions with different audiences.

Participation Structure on Facebook

Although early research treated SNSs as a monolithic communication platform, recent studies take a more granular approach to forms and uses of SNSs by distinguishing them by the degree of interaction publicness and directedness that they allow (e.g., Burke, Marlow, & Lento, 2010; Yoder & Stutzman, 2011). Publicness refers to “the probability that one’s behavior will be observed by others and the number of others who might see or learn about it” (Leary & Kowalski, 1990, p. 38). Directedness, on the other hand, refers to whether a message is explicitly targeted at a particular person or not. Facebook’s status updates, wall posts, and private messages provide three different combinations of publicness and directedness.² Status updates such as “New York City for the day . . . 21!” are publicly shared with a profile owner’s whole network and not explicitly directed at any particular person. Private messages are the opposite. A private message, such as “Hey, really sorry for not responding, it completely slipped my mind. I ended up going home for the weekend. Thanks anyways, really sorry,” is similar to e-mail or private chat conversations: directed at a specific receiver (or small group) and not visible publicly to the network. Finally, wall posts, such as “Hey! The school year is starting to wrap up—something I’m very grateful for! Hope all is well with you too! It’s been years!” are a hybrid. Like private messages, they are usually directed at a particular person; however, they are publicly visible to both the poster’s and the receiver’s networks. Furthermore, because status updates are nondirected, they are often assumed to be “author-centric” (Kramer & Chung, 2011), that is, contain information pertaining to the author in some way. In contrast, wall posts and private messages, because of their other-directedness, are more concerned with the receiver in function compared with status updates (Krämer & Haferkamp, 2011).

These distinctions are important because they reflect differences in the *participation structure* of a communication medium, which refers to characteristics of audience and interaction, the private/public nature of interaction, the number of potential and active participants, and the balance of participation across individuals (Herring, 2007). Facebook itself provides no specific help content or guidelines that describe how one should use these different media; however, participation structure does influence language use and underlying social processes through the conditioning of interactions (Herring, 2007). Thus, comparing linguistic behavior between participation structures could provide a lens for understanding how people experience and adapt to multiple and diverse audiences in Facebook interactions.

Self-Expression and Language Emotionality on Facebook

We focus on linguistic behavior because social processes like self-presentation and managing relationships are “inherently linguistic phenomena” that both reflect and influence the social context of interaction (Holtgraves, 2002, p. 2). Linguistic choices carry social meanings, including the desire to negotiate relationships and control the impressions formed by others. Language style can reveal attempts at managing impressions and relationships more accurately than language content (i.e., the topics people discuss) because the former is usually not under conscious control (Pennebaker, Mehl, & Niederhoffer, 2003). For example, previous research linked changes in linguistic style to a target’s attractiveness and status in dyadic computer-mediated interactions (Walther, 2007) and to relational quality in face-to-face communication (e.g., Simmons, Chambless, & Gordon, 2008). Here, we argue that both self-presentational concerns and participation structures are likely to affect language style around emotionality, and we explore what the frequency and functionality of positive and negative emotions can reveal about how people experience and navigate multiple audiences on SNSs.

Frequency of positive and negative emotions. Although people are equally likely to share positive and negative experiences with others (e.g., Skowronski, Gibbons, Vogl, & Walker, 2004), these expressions serve different functions. Sharing positive emotions contributes to happiness by sustaining those emotions and eliciting positive feedback from others (Diener, 2000) while facilitating positive social interactions (Augustine, Mehl, & Larsen, 2011). Sharing negative events and emotions can reduce the intensity of negative affect, evoke comfort and social support from listeners, and elicit alternative perspectives and advice (Skowronski et al., 2004). The expression of positive and negative emotions is also influenced by self-presentational desires to appear attractive, competent, and socially desirable (Leary & Kowalski, 1990).

In terms of Facebook participation structures, we argue that both publicness and directedness will affect how people express emotions. In general, we expect public messages to be more positive and less negative in tone. This is because negative emotions are more private than positive emotions (Finkenauer & Rimé, 1998) and often are attached to sensitive and private information, creating a social norm of focusing on positive rather than negative emotions in conversations with strangers and acquaintances (Leary, 1995). These norms hold in Facebook as well. Status updates do contain more positive than negative language (Kramer & Chung, 2011), and the expression of negative emotions and experiences is perceived less favorably than that of positive experiences in public Facebook conversations (Bazarova, 2012).

However, the directedness of the message may moderate these norms. For example, expressing sadness or grief in response to somebody else’s misfortune is less private and more socially acceptable than revealing negative emotions associated with personal responsibility for an event (Finkenauer & Rimé, 1998). In particular, although wall posts are public, they are presumably more concerned with the receiver than the sender of the message compared with status updates, so we expect that status updates

will feature less negative and more positive self-expression than either wall posts or private messages. Furthermore, because prior work suggests that people might both increase their positive communication and reduce their negative communication in public, we will conduct separate analyses on positive and negative emotions, rather than combining them into a single index as in Kramer and Chung (2011). Therefore, we predict the following:

Hypothesis 1A: Facebook status updates have more positive emotion words than wall posts or private messages.

Hypothesis 1B: Facebook status updates have fewer negative emotion words than wall posts or private messages.

Self-presentational functions of positive and negative emotionality. Emotional expressions can also serve self-presentational purposes, with the expression of more positive and fewer negative emotions typically associated with positive impressions (Leary, 1995). As people strive to create positive impressions of personal character, beliefs, attitudes, and status (Goffman, 1967), the publicness and directedness of the interaction could affect the extent to which self-presentational concerns underlie emotional expressions. In particular, previous research has linked the salience of self-presentational concerns to the publicness of behavior (Baumeister, 1986). Public behaviors increase commitment because they offer evidence of personal character to others and thus are more relevant to self-identity and esteem maintenance goals than private behaviors (Schlenker, 1986). Because self-presentational concerns are likely to increase with the size, heterogeneity, and unfamiliarity of the audience (Gonzales, 2010), they may be especially salient in public participation structures on Facebook. Therefore, we predict that the strategic use of emotions for managing successfully “the external and public display of self” (Carver & Scheier, 1981) increases in the presence of multiple audiences and collapsed contexts. We expect this to be especially evident in status updates, because self-presentational concerns are apparent in self-centered versus other-centered communication (Baumeister, 1986), and status updates are publicly shared and have an author-centered focus. Thus, we predict the following:

Hypothesis 2A: A positive association between self-presentational concerns and expression of positive emotions is greater in status updates than in wall posts or private messages on Facebook.

Hypothesis 2B: A negative association between self-presentational concerns and expression of negative emotions is greater in status updates than in wall posts or private messages on Facebook.

Partner Familiarity and Verbal Immediacy

In addition to self-presentational challenges, navigating multiple audiences on SNSs may pose relational management difficulties. On one hand, one-to-many message

sharing reduces per-message transaction costs (Tong & Walther, 2011), and easy access to social resources and information increases opportunities for social capital building (Ellison, Steinfield, & Lampe, 2011). On the other hand, multiple audiences are undifferentiated on Facebook; people with different levels of familiarity to a profile owner are designated as “friends,” as Gilbert and Karahalios (2009) point out: “All users are the same: friend or stranger, with little or nothing in between” (p. 211). Their research, however, shows some explicit and implicit markers, including common group membership, number of mutual friends, and frequency of intimacy words exchanged between people, that were predictive of strength of relational ties on Facebook.

The other challenge to relational management on SNSs is that an interaction context itself takes on a social meaning, affecting inferences about a message and a sender. According to a recent study of disclosure interpretation in private versus public contexts, a directed public message sent via a wall post is viewed as less personal and intimate compared with the same message shared privately on Facebook because receivers partly derive a relational value of a message based on the sender’s choice of public versus private interaction structures (Bazarova, 2012). The evidence that people discount message and relational intimacy between a sender and a receiver in a public exchange suggests that there may be a relational cost associated with public communication.

It is possible, however, that senders can compensate for these costs by using linguistic styles that emphasize relational meaning for more familiar and relationally close partners in public contexts. Previous research identified certain characteristics of language style that communicate psychological closeness and immediacy (Pennebaker & King, 1999). This style is characterized by “concrete, personal, involved, experiential language with a focus on the here and now” (Borelli, Sbarra, Mehl, & David, 2011, p. 343), which is signaled by using more first person singular pronouns (*I, me, and my*), more present tense verbs, more discrepancies (e.g., *could, should, and would*), fewer long words, and fewer articles. Empirical studies of verbal immediacy linked it with psychological closeness and conversational engagement (for review, see Pennebaker et al., 2003). For example, a study of couples with different degrees of dispositional involvement in interactions showed higher verbal immediacy scores for more involved than less involved couples (e.g., Cegala, 1989). Similarly, people use more verbally immediate language in informal and socially oriented as opposed to formal and task-oriented situations (e.g., Pennebaker & King, 1999). Low degrees of verbal immediacy, in contrast, are thought to reflect more detachment and less psychological and personal involvement (e.g., Borelli et al., 2011; Cohn, Mehl, & Pennebaker, 2004).

In the context of Facebook, a choice of a private participation structure serves as a signal of relational value because a sender chooses to share a message with a selected recipient, rather than a whole network (Bazarova, 2012). Therefore, although we expect that verbal immediacy should be higher in private than public contexts overall because people share more intimate and private information in private than in public communication (Baumeister, 1986), we also predict that language markers of immediacy should play a more important role in signaling partner familiarity in public wall

posts as opposed to private messages, where the context itself helps to convey privacy and closeness.³ Therefore, we predict the following:

Hypothesis 3: Verbal immediacy is higher in private messages compared with public wall posts on Facebook.

Hypothesis 4: A positive association between partner familiarity and verbal immediacy is greater in public wall posts than in private messages on Facebook.

Method

Participants

Seventy-nine participants (72% female) from a mixture of majors at a U.S. research university were recruited to participate in an experiment in exchange for course extra credit. Participants' ages ranged from 18 to 31 years, with a mean of 20 ($SD = 1.14$). They consisted of 22% freshmen, 24% sophomores, 37% juniors, 12% seniors, and 5% with missing information. Fifty-six percent were Caucasians, 28% Asians, 7.4% African Americans, 3% Hispanics, 1.5% Pacific Islanders, and 4.1% those who did not indicate ethnicity.

To measure the number of friends and the number of years participants had a Facebook account, we used categorical variables, similar to Ellison, Steinfield, and Lampe's (2007) work. Table 1 reports the number of Facebook friends, the number of years using Facebook, and the number of minutes spent on Facebook daily.

Procedure

The data were collected in the spring of 2011. At the time, Facebook offered a private messaging feature similar to e-mail or instant messaging. By default, wall posts were accessible to "friends" of both the profile owner and the wall post message poster, whereas status updates were accessible to "friends" of the profile owner.

After giving consent to participate in the study, participants were accompanied to a room with a computer. They were instructed to log on to Facebook and copy and paste the six most recent status updates, wall posts, and private messages they had written and the dates of the messages into a web survey. They were also asked to answer questions about their self-presentational concerns for every message and about their familiarity with the target of each of the wall posts and private messages. The median value in days for the time span during which the six messages were produced for each participant was as follows: for status updates, $Mdn = 26$; for wall posts, $Mdn = 9$; for private messages, $Mdn = 27$. We report median as a measure of central tendency because it is not as strongly influenced by outliers (e.g., people who produced 1 to 2 status updates a year) as the mean is.

Table 1. Summary Statistics for Facebook Use.

Facebook use	Mean	SD	Mdn
About how many total Facebook friends do you have? 1 = 100 or less, 2 = 101 to 200, 3 = 201 to 300, 4 = 301 to 500, 5 = 501 to 1,000, 6 = 1,001 or more	4.90	0.84	5
How long have you had your Facebook Profile? 1 = less than 6 months, 2 = 6 months to 1 year, 3 = 1 to 2 years, 4 = 2 to 4 years, 5 = more than 4 years	4.48	0.60	5
In the past week, on average, approximately how many total minutes per day have you spent on Facebook? 1 = less than 10 minutes, 2 = 11 to 30 minutes, 3 = 31 to 60 minutes, 4 = 1 to 2 hours, 5 = 2 to 3 hours, 6 = more than 3 hours	3.56	1.49	4

Measures

Self-presentational concerns. For each message reported, participants answered questions about their self-presentational concerns, which were adapted from the scale of public self-awareness (Prentice-Dunn & Rogers, 1982), four items, $\alpha = .96$, and measured on a 5-point scale. Example items include, “How important was it for you to convey a desirable impression?” or “How concerned were you about the way you presented yourself?”

Partner familiarity. For each of the private messages and wall posts, participants were asked to rate familiarity to an intended receiver, two items, $r(150) = .90$, $p < .001$, measured on a 7-point scale. The two items were “How well do you know the receiver of the message?” and “How familiar are you with the receiver of the message?”

Linguistic data preparation. For the data preparation, we followed the instructions outlined in Mehl and Gill (2010). Specifically, we removed text that did not reflect the author’s own language use (e.g., text generated by Facebook itself or by a participant’s friends, quotes from movies and songs, URLs, etc.) and spell-checked to maximize word recognition by the LIWC dictionary. After this content was removed, the remaining 1,227 messages were analyzed using the Mac version of LIWC 2007 (Pennebaker et al., 2007). LIWC compares each word in the text against a dictionary containing 70 linguistic categories (e.g., first person pronouns, positive emotions) and outputs the number of total words per message ($M = 21.73$, $SD = 44.47$, $Mdn = 10$) and percentage of words falling into each of these categories.

We implemented a change to the LIWC dictionary by creating an additional category for “happy birthday” messages so that it would not artificially inflate the percentage of “positive emotion” words in LIWC. This phrase constituted 0.5% of the total data on the word level (11.5% on the message level), and almost all of “happy birthday” messages (95%) in our data set were sent as wall posts, which is a fairly strong Facebook norm. Although an individual’s desire for his or her Facebook friend to have

a happy birthday is a positive sentiment, the phrase is often not produced spontaneously when one friend remembers that it is another's birthday—Facebook reminds its users when their friends' birthdays are, which is often the only thing that prompts these messages. Therefore, the occurrence of word *happy* in the phrase "happy birthday" was not included in the count of positive emotion in the reported analyses.

Linguistic categories. Linguistic categories of relevance were positive-emotion words (e.g., glad, good, love) and negative emotion words (e.g., sad, hate, afraid), with higher scores indicating greater intensity for positive and negative emotions, respectively. The verbal immediacy index was a composite variable based on the factor analytical solution derived in Pennebaker and King's (1999) work. This index was calculated as the arithmetic mean consisting of the LIWC scores for first person singular pronouns (e.g., *I, my, me*), present tense verbs, discrepancies (e.g., *could, would, should*) and inverse scores for words of more than six letters and articles. The resulting composite variable had $M = -1.29$, $SD = 4.17$, and $Mdn = -0.50$. Higher scores for verbal immediacy correspond to more personal and immediate language style, and, vice versa, lower scores mark less personal and immediate language style.

Results

The analyses were carried out with multilevel modeling in an SPSS MIXED procedure to account for potential nonindependence of residuals resulting from multiple observations on each participant. To minimize the influence of outliers because of low word count per message in some cases, we aggregated scores of all variables over each participant's message category (status updates, wall posts, and private messages) to create an overall score of each measure representing the average across the six messages in that person's category. The predictor variables of self-presentation and partner familiarity were grand mean centered to facilitate interpretation of results (Park, 2008). The variables of self-presentation and partner familiarity were negatively correlated with each other, $r(150) = -.31$, $p < .01$.

To verify directedness of status updates versus wall posts and private messages, we first compared the degree to which individuals focused on the self versus others, as expressed by the use of personal pronouns. Because the use of second person pronouns (e.g., *you, your, and yours*) suggests that an individual is attending to another person (Chung & Pennebaker, 2007), directed wall posts and private messages are expected to have a greater number of second person pronouns than status updates.⁴ A contrast analysis using -1 weight for directed messages (wall posts and private messages) and a weight of $+2$ for the cell with nondirected messages (status updates) confirmed this prediction, $t(144) = 7.32$, $p < .001$; for status messages, $M = 1.71$, $SE = 0.43$; for wall posts, $M = 5.92$, $SE = 0.41$; for private messages, $M = 5.02$, $SE = 0.41$.

Emotionality and Self-Expression

Our first set of hypotheses concerned the functionality of positive and negative emotions, as manifested in the frequency of emotion words and their relationships to

self-reports of self-presentational concerns. As with the previous analysis, these hypotheses were tested using -1 weight for directed messages (wall posts and private messages) and a weight of $+2$ for the cell with nondirected messages (status updates). Hypothesis 1A predicted more positive emotion words in status updates than in wall posts or private messages. However, the contrast analysis showed no differences, $t(150) = 0.95, p = .35$; for status messages, $M = 6.76, SE = 0.68$; for wall posts, $M = 7.93, SE = 0.65$; for private messages, $M = 7.13, SE = 0.66$. Thus, the expression of positive emotions was not statistically different between status updates, wall posts, and private messages. Hypothesis 1B predicted fewer negative emotion words in status updates compared with wall posts or private messages. The contrast analysis confirmed this prediction, $t(144) = 2.17, p = .03$; for status messages, $M = 1.76, SE = 0.36$; for wall posts, $M = 2.78, SE = 0.34$; for private messages, $M = 2.53, SE = 0.35$. Thus, status updates featured fewer negative emotion words compared with wall posts and private messages.

The next set of hypotheses predicted that self-presentational concerns would play a more prominent role in the expression of both positive and negative emotions in status updates than in wall posts or private messages. Confirming Hypothesis 2A's prediction for positive emotions, the contrast analysis for the interaction between condition and self-reports of self-presentational concerns was significant, $t(115) = 2.04, p = .04$, showing that the increase in self-presentational concerns was associated with a greater increase in positive emotion words in status updates, $\beta = 2.17, SE = 1.31$, compared with wall posts, $\beta = -0.63, SE = 1.31$, or private messages, $\beta = 0.54, SE = 0.98$. Furthermore, whereas there was a significant relationship between self-presentational concerns and the number of positive emotion words in status updates, $F(1, 68) = 6.49, p = .01$, there was no association between them either in wall posts, $F(1, 74) = 0.32, p = .57$, or private messages, $F(1, 72) = 0.54, p = .46$.

The analogous Hypothesis 2B for negative emotions was not supported, $t(173) = -0.25, p = .80$, suggesting that there were no statistical differences in the way negative emotions reflected self-presentational concerns across status updates, $\beta = -0.40, SE = 0.67$, wall posts, $\beta = -0.12, SE = 0.68$, and private messaging, $\beta = -0.40, SE = 0.52$. Likewise, the association between self-presentational concerns and the overall expression of negative emotions was not significant, $F(1, 65) = 0.97, p = .33$.

Verbal Immediacy and Partner Familiarity in Wall Posts Versus Private Messages

The next set of analyses concerned verbal immediacy in wall posts versus private messages. Recall that we used a composite variable to measure verbal immediacy consisting of the LIWC scores for first person singular pronouns, present tense verbs, discrepancies, and inverse scores for words of more than six letters and articles. The first analysis was run to test whether there was a significant difference in the use of verbal immediacy between Facebook wall posts and private messages, $F(1, 65) = 57.81, p < .001$. Confirming Hypothesis 3, the language of private messages was

marked by more verbal immediacy, $M = 1.26$, $SE = 0.45$, compared with language of wall posts, $M = -3.37$, $SE = 0.45$.

Consistent with Hypothesis 4, there was also a significant interaction between partner familiarity and Facebook condition, suggesting that changes in verbal immediacy associated with partner familiarity were different across the two conditions, $F(1, 56) = 5.71$, $p = .02$; for private messages, $\beta = 0.20$, $SE = 0.53$, and for wall posts, $\beta = 1.93$, $SE = 0.73$. Whereas verbal immediacy was not associated with partner familiarity in private messages, $F(1, 72) = 0.03$, $p = .86$, there was a significant relationship between verbal immediacy and partner familiarity in wall posts, $F(1, 74) = 8.00$, $p < .01$.

Discussion

Facebook and other SNSs have become part of a daily communication menu for millions of people, but even more remarkable than their ubiquity is the social nature of these technologies and how they provide new contexts for social expression and engagement. By collapsing contexts and combining multiple audiences into one network, these technologies can affect fundamental processes of human communication, such as self-presentation and relational management. This opens new opportunities and challenges for understanding how people communicate and interpret messages and social meanings (Walther, 2012). One way to understand communicative processes in new sociotechnological contexts is through the analysis of language because “to use language is to engage in a social process, a process that both reflects and creates the social order and hence a process with multiple social implications” (Gasiorek et al., 2012, p.13).

Applying the analysis of language style characteristics within the framework of participation structure (Herring, 2007), our data showed evidence of differences in language style markers between Facebook contexts, which signifies people’s adaptations of language style to different situations and audiences. With regard to self-presentation management, we found differences in the expression of negative, but not positive, emotions in status updates compared with wall posts or private messages. Despite the equal levels of positive emotion words expressed in status updates, wall posts, and private messages, positive emotions were associated with self-presentational concerns only in status updates, showing a strategic use of expressed emotions for managing self-presentation. The results on verbal immediacy when messages are directed at another person showed that language markers of verbal immediacy differentiated between more and less familiar relations in public contexts (i.e., wall posts) but not in Facebook private messages. Below we discuss theoretical implications of these findings and future research directions.

Expressed Emotionality and Public Self-Presentation

As mentioned earlier, the data indicate that the expression of positive emotions was not statistically different between status updates, wall posts, and private messages, but

people expressed significantly fewer negative emotions in status updates compared with the two other modalities. These results extend previous findings on the ratio of positive to negative emotions in status updates (Kramer & Chung, 2011) by showing that the decrease in negative emotionality, rather than the increase in positive emotionality, is what sets status updates apart. Furthermore, our findings point out a strategic function of expressed emotionality. Despite the equal levels of positive emotion words expressed in status updates, private messages, and wall posts, positive emotions were associated with self-presentational concerns in status updates. This reveals a moderating factor in context of the “gross national happiness” hypothesis on Facebook (Kramer, 2010), which suggests that the greater ratio of positive to negative emotions in status updates reflects the subjective well-being of Facebook users. Our data suggest that part of this effect may be explained by elements of self-presentation that affect emotional displays in author-centered status updates along with simple emotional expression as a reflection of internal emotional states.

By examining associations between expressions of emotions and self-presentational concerns, this study also raises a more general question about the functionality of expressed emotions on Facebook. Expressed emotions can serve multiple functions, including reflecting internal states, building relational closeness, and strategically managing one’s self-presentation (Schlenker, 1986; Tausczik & Pennebaker, 2010), and there is a need to better understand the motives that drive these emotional expressions in social media. For example, using analysis of speech acts, a recent study of Facebook status messages found that “almost 60% of status messages containing an expressive speech act to convey emotion toward the receiver(s)” (Carr, Schrock, & Dauterman, 2012, p. 187). Carr et al. interpreted this emotional content as a reflection of users’ desires to interpersonally connect with their audiences. However, they recognize that status updates also serve as “public displays” (p. 188)—and our findings show that concerns about self-presentation are prominent in people’s minds when they express positive emotions via status updates. The use of emotional expression to present the self rather than connect with others also appears in a recent study of Twitter in which emotional content in tweets was positively correlated with network size and negatively correlated with network density (Kivran-Swaine & Naaman, 2011). That is, people shared more emotional content with larger networks composed of less intimate acquaintances. These findings raise questions about the relational functionality of emotional content in status updates and the possible effect of the invisible and multiple audiences created by their public nature in facilitating a greater self-presentational focus.

Context collapse in social media may also activate other functions of shared emotionality, which need to be considered in regard to Facebook participation structures. For example, according to the theory of the social sharing of emotions (Rimé, 2007, 2009), a basic function of sharing emotions with others is to reexperience them. This “capitalization” of positive emotions allows individuals to enhance their own and others’ positive emotional states and helps groups build a collective memory of the emotional event. Recent qualitative interviews with Facebook users suggest that, especially for

self-directed status updates, a wide audience reach and self-review or self-surveillance of one's own posts (Humphreys, 2011) can facilitate capitalization of positive emotions (Sas, Dix, Hart, & Su, 2009). Work to tease apart different functions of shared emotionality in social media—and to handle cases when multiple goals are at play simultaneously, as when people use Facebook in the context of their romantic relationships (Zhao, Sosik, & Cosley, 2012)—would improve both our understanding of self-presentation and our ability to estimate and model emotional states based on content and language style on Facebook and in other social media such as Twitter (Golder & Macy, 2011).

Verbal Immediacy and Partner Familiarity on Facebook

The results on verbal immediacy and partner familiarity extend previous work on linguistic and structural characteristics of relational ties (e.g., Gilbert & Karahalios, 2009) by identifying dimensions of language style that serve as markers of partner familiarity in wall posts. Although Facebook private messages were higher in their level of verbal immediacy than were overall wall posts, the level of verbal immediacy stayed relatively constant in private messages, regardless of the level of partner familiarity. In contrast, verbal immediacy reflecting more personal, experiential, and involved language correlated with greater familiarity with a partner in wall posts. These results are consistent with our prediction that variations in verbal immediacy are more important in wall posts than in private messages. It appears that people feel a greater need to differentiate between partners in wall posts when communicating with a partner in an open, public exchange as opposed to private communication with a selected addressee.

These results are interesting to consider for relational maintenance processes on SNSs. According to Walther and Ramirez (2009), “these systems provide a dramatically new way to enact relational maintenance” (p. 279), but their relational functionality is yet to be explored. By reaching wide audiences and inviting others to take part in a communicative exchange on a Facebook wall, these technologies are “lightweight” because they reduce the amount of time and effort required for maintaining relational connections (Tong & Walther, 2011). As Tong and Walther wrote, “Social technologies that allow individuals to broadcast mundane narratives and reflections to both intimate and less intimate partners provide more relational maintenance ‘bang’ for the message-sending ‘buck’” (p. 113). The reductions in cost for a sender may come, however, with a price of reduced intimacy in receivers’ message interpretation, as readers of a wall post can discount the relational value of a message and relational ties between a sender and a receiver compared with a private, dyadic exchange (Bazarova, 2012). But, as the present findings suggest, senders may compensate for the publicness of participation structures by putting more emphasis on verbal immediacy to differentiate between more and less familiar partners. In other words, senders can adapt to open public exchanges with undifferentiated audiences by signaling their involvement and

engagement in interactions with a more familiar partner through language markers of verbal immediacy. Future research needs to integrate changes in message construction and interpretation on SNSs into a combined framework to examine how senders' language style adaptations influence receivers' interpretation and reciprocation of these signals and their combined influences on relational dynamics on SNSs.

Future research also needs to extend the role of linguistic style markers in managing different types and stages of relationships. For example, how do people use language style to signal changes in relationships, such as to express romantic interest or a change in relational closeness? As recent research shows, romantic partners seek public validation of a relationship in their public communication on SNSs (Zhao et al., 2012) but have to simultaneously manage a complicated set of identity, relational, and social goals and norms. Linguistic style analysis may help untangle and weigh those competing forces for fulfilling various relational functions and needs.

Limitations

The main limitation of the study has to do with the nature of a sample population because we collected Facebook messages from college students in one institution. Although the limitation in terms of generalizability is balanced by the advantages of studying language use in naturally occurring environments (Pennebaker et al., 2003), future research needs to examine how these findings generalize to college students in other institutions as well as to other Facebook populations, for example, older adults or people with a different education level or of a different socioeconomic status. These extensions are even more important as Facebook users become increasingly demographically diverse (Hampton, Goulet, Rainie, & Purcell, 2011; Madden, 2010), and research needs to take into account sociodevelopmental differences in how people communicate in novel social media environments. Another limitation of this study is the use of a two-item measure for the construct of partner familiarity. Although the two items were highly correlated, future research might consider using additional indicators, as well as alternative measures to capture different relational dimensions (e.g., strength of ties or relational intimacy), in addition to partner familiarity used in this research.

Conclusion

The present work contributes to existing research by examining how people use language to manage self-presentational and relational concerns in new communication contexts provided by SNSs. Consistent with the call for studying language use in connection with interaction context and structure (Gasiorek et al., 2012), this study compared linguistic style and self-presentational and relational concerns in status updates, wall posts, and private messages. The results show differences in the frequency and functionality of language style markers, which signify people's adaptations of language style to different situations and audiences.

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Notes

1. In this article, we discuss the typical visibility of posts in Facebook. Facebook does provide privacy controls to give people control over messages' visibility; although these controls are not featured, they can have unexpected interactions with others' privacy settings, and the extent to which they are used is unknown.
2. In principle, people can change privacy settings for individual posts, although we suspect that they rarely do so. For example, even when people express concerns about privacy, their privacy attitudes are not typically reflected in their privacy regulation behaviors in social media (Acquisti & Gross, 2006).
3. We do not address public status updates because they are not directed, and therefore, it is difficult to measure relational closeness with a target audience.
4. Although status updates suggest attentional focus on self, no parallel hypothesis is made for first person pronouns because Facebook automatically starts status update posts with the sender's name.

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