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STRATEGIC IMAGE MANAGEMENT ONLINE

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Self-presentation, self-esteem and social network perspectives

Communication technology is challenging traditional self-presentation strategies and behavior. Deliberate image construction is becoming more difficult because of the increasing number of information sources about individuals online. The present study examines a range of self-presentation behaviors on social network sites (SNS) by drawing on impression motivation, contingencies of self-worth, and the analysis of social network structure. Results from the survey data show that users (N = 248) who stake their self-esteem on public evaluations and have heterogeneous social networks are more strategic in the management of tagged photos and text-based updates in the form of wall posts. Furthermore, the interaction between network size and diversity predicts how often users share photos. Implications for improving privacy management tools on SNS and educating users about strategic self-presentation are discussed.

Keywords computer-mediated communication; social media; social networking

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Humans actively work to manage the impressions they make on others. Internet-based communication tools provide novel venues for self-disclosure, self-presentation, and impression management. The processes of self-presentation – self-disclosure and reactions to others' disclosures – are the focus of the current research.

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Effective self-presentation online is becoming more difficult today because communication technology limits users' control over the information they use to strategically present themselves. While on older computer-mediated communication (CMC) platforms like online chat rooms, all available social information is self-provided, today's participatory web (e.g. social network sites; SNS) is defined by user-generated content and allows both users and their social network members to communicate publicly with each other. For example, users can tag and identify photos of each other, and post publicly accessible text messages on each others' profile pages. This type of *other-provided information* can subvert the carefully constructed images users try to maintain and challenge their idealized presentation of self (Ramirez & Walther 2009).

Scholarship suggests two key factors that influence impression management, differentiated by the classic trait- and state-level variable dichotomy. On the one hand, self-presentation is driven by individual goals and influenced by unique contingencies individuals stake their self-esteem on (Leary & Kowalski 1990; Crocker & Wolfe 2001). Individuals who stake their self-esteem on positive images regard self-presentation more important and are more likely to manage their public impressions strategically.

Impression management strategies are also contingent on social network characteristics such as size and diversity because self-presentation is dependent on state-level variables like audience characteristics (Goffman 1959). Traditional geographic and temporal constraints on one's audience enable individuals to adjust self-presentation to others' feedback, but these constraints diminished on SNS. These sites functionally connect people's previously disparate social groups (or audiences), and encourage users to broadcast messages across their entire online networks. Thus, successfully managing the impressions one gives off is becoming more difficult today (Cesar *et al*. 2010; Velasco-Martin 2011).

The impact of other-provided information and the structural characteristics of today's mediated social networks on the disclosure and image-maintenance behaviors described above remains understudied. Because other-provided information is becoming increasingly common in contemporary CMC environments (Ramirez & Walther 2009) and online social networks continue to grow in size (Hampton *et al*. 2011), we propose to examine factors that influence the *self*-initiated sharing of personal information such as photos and text-based messages in the form of public wall posts. We also investigate the strategic management of *other*-initiated comments about shared photos and wall posts on Facebook. The current study builds on research that addresses motivations for self-presentation (Leary & Kowalski 1990), contingencies of self-worth (CSW; Crocker & Wolfe 2001), and the analysis of online social network structure (Binder *et al*. 2009). Our goal is to explore the intersection of how self-esteem and social network characteristics influence online impression management behavior in light of self- and other-provided information.

Trait-level motivations for impression management

While self-presentation and impression management are closely aligned concepts, there is a consensus in the literature that self-presentation refers to 'the process of controlling how one is perceived by other people' (Leary 1995, p. 2). Leary and Kowalski (1990) describe self-presentation as a goal-driven behavior. Social exchange theories explain that human behaviors are motivated by balancing costs and rewards (Stafford 2008). Following this perspective, Schlenker (1980) argues that the primary motivation of self-presentation is to maximize the cost/benefit ratio. Leary and Kowalski (1990) furthered Schlenker's argument by suggesting that individuals engage in self-presentation because positive self-images facilitate goal attainment. These goals vary from maintaining self-esteem, receiving social acceptance, and material gains. It is important to note that the literature on self-presentation and social exchange operationalize individuals as rational and strategic beings.

Research also suggests that SNS users have strategic goals when they use those sites. The heaviest users seek and compete for attention (Stefanone *et al*. 2008; Stefanone & Lackaff 2009) and most users motivated by the need to be socially accepted carefully manage their online identities (Binder *et al*. 2009; Tokunaga 2011). Newcomers use these sites to help integrate into their new surroundings and pursue networked resources (DeAndrea *et al*. 2012; Madge *et al*. 2012). Constructing and maintaining positive self-images is important to achieving all these goals because research shows that unsuccessful self-presentation is often associated with rejection and criticism (Binder *et al*. 2009; Tokunaga 2011).

However, the level of motivation for strategic self-presentation depends on how valuable these goals are perceived to be (Leary & Kowalski 1990). We argue that constructing and maintaining positive self-images is more valuable to those who stake their self-esteem and personal value on these images. CSW (Crocker & Wolfe 2001) provide a conceptual framework to assess the relative importance of image-based goals like these.

Contingencies of self-worth

Self-esteem refers to one's appraisal of the value or worth of the self. While self-esteem has been a common measure in social psychology, recent research shows that different individuals look to different domains of their life for self-esteem appraisals. Therefore, valid measurement of self-esteem requires a multidimensional approach. Crocker and Wolfe (2001) suggest that individuals enact behaviors that enhance their self-worth within particular contingent domains. Based on this argument, Crocker and Wolfe (2001) propose CSW, defined as domains or categories of 'outcomes on which a person has staked his or her self-esteem,

so that person's view of his or her value or worth depends on perceived successes or failures or adherence to self-standards in that domain' (p. 594).

Seven domains of contingency have been identified by Crocker *et al*. (2003), including competencies, competition, approval from generalized others, family support, appearance, God's love, and virtue. Briefly, competencies refer to specific abilities such as academic competence; competition refers to outdoing others; approval from generalized others refer to the perception of others' esteem; family support refers to perceived affection and love from family members; appearance refers to self-evaluations of one's physical appearance; God's love refers to the belief that one is valued by a supreme being; and virtue refers to adherence to a moral code.

Research shows that CSW explains behaviors in a variety of contexts. For example, Crocker *et al*. (2003) found appearance CSW predicted the extent to which people socialized, shopped, joined social groups such as fraternities/sororities, and engaged in grooming behaviors. However, appearance had a negative relationship with spiritual activities and time spent with family. Furthermore, academic competency demonstrated a positive relationship with time spent studying and a negative relationship with socializing. Regardless of high or low overall self-esteem, people seek positive feelings associated with success in their CSW and avoid negative feelings associated with failure in these domains.

Crocker and Wolfe (2001) conducted factor analyses on the original CSW measurement items and found an underlying factor structure. As such, they further categorized CSW into externally and internally oriented domains. Individuals with externally oriented CSW stake their self-esteem on outside evaluations such as physical appearance, competence, and others' approval, whereas individuals with internally oriented CSW stake their self-esteem on more private dimensions, including religion, family, and virtue. In a study about CSW and online behavior, Stefanone *et al*. (2011) confirmed the two-factor structure for CSW. Once again, the first factor comprises elements related to more traditional, personal domains such as family, virtue, and God's love, and was labeled *private sphere* contingencies. The second factor focused on approval, appearance, and competition. The authors labeled this factor *public sphere* contingencies. These public sphere contingencies relate more to public interaction and evaluation, and their results show that public sphere CSW was associated with more photo sharing online and a generally higher level of competition for attention.

In the context of the current research, most goals motivating the SNS uses described above, including social acceptance, identity confirmation, and attention seeking, are based on gaining recognition from personal network members. Because individuals exhibiting a greater stake in public sphere CSW base their self-esteem on recognition from others, these impression-based goals should function as primary motivators.

Although idealized self-images are valuable and facilitate the attainment of impression-based goals for SNS users with public sphere CSW, it is becoming more difficult for users to maintain idealized self-images online today. As online networks become more expansive, the abundance of other-provided information functionally reduces the level of control users have over information available about themselves, resulting in more unwanted other-provided information.

Protective self-presentation

According to Ramirez and Walther (2009), the contemporary Internet is a multi-source communication environment. On traditional CMC platforms like online chat rooms, all information is *self-provided*. However, today's Internet increasingly makes *other-provided information* available. For example, users can post comments about items they purchased on sites like amazon.com and add commentary to articles they read on sites like nytimes.com. In the context of SNS, users often post content on *other* users' profile pages. This other-provided information on SNS reduces the level of control users have over the information that is publicly available about themselves.

A typical example of other-provided information on SNS is the tagging of personal photographs. Users can digitally 'tag' friends who appear in shared photos by linking images directly to their friends' public profile pages. As a consequence, this information (the digital photograph) becomes visible to all members of that friend's network. However, problems may arise when there is disagreement about whether it is appropriate to publicize these pictures (Binder *et al*. 2009) because the content of these images may present information contradictory to one's idealized image (Besmer & Lipford 2010; Smock 2010). There are plentiful examples in the mainstream media of underage youths getting in trouble because their parents saw compromising pictures of them online (for example, consuming alcohol). This somewhat stereotypical example demonstrates the potential consequences of broadcasting personal information to multiple and often unintended audiences. Furthermore, warranting theory argues that other-provided information is credible because it is less susceptible to manipulation (Walther & Parks 2002), so it often has a greater impact opposed to self-provided information. The evidence reviewed above suggests other-provided information can have detrimental effects on the strategic self-presentation goals of SNS users. The literature highlights a range of strategies for protective self-presentation *in response* to unwanted other-provided information (Arkin 1981; Leary 1995). These protective self-presentation strategies are classified into two categories (Smock 2010). The first is *repudiative* strategies. These are used to deny certain characteristics associated with individuals. Individuals can opt for an 'innocence' defense, look to justify themselves, or make compensatory self-presentations (Leary 1995; Crocker & Park 2005; Smock 2010). The second is *subtractive* strategies, referring to removing unwanted

information. Individuals can disconnect the link between themselves and the tagged photos (untagging), or delete unpleasant posts on their profile pages (Smock 2010). In addition, research also suggests strategies for protective self-presentation in terms of disclosing self-provided information. When discrepancies are expected between desired and actual self-images, individuals may choose to reduce the amount of self-provided information to avoid unpleasant consequences.

In sum, based on Leary and Kowalski's (1990) research on motivations for strategic self-presentation and Crocker and Wolfe's (2001) research on CSW, we propose a theoretical framework for the current study. Individuals who exhibit public sphere CSW stake their self-esteem on public or external evaluations. Thus, impression-based goals such as social acceptance, identity confirmation, and attention seeking function as primary motivators for strategic self-presentation. Furthermore, because self-esteem depends on public recognition, these users may disclose more about themselves (Stefanone *et al*. 2011).

H1: There is a positive relationship between public sphere CSW and the amount of self-provided information online.

Moreover, in the face of unwanted other-provided information, protective self-presentation is more likely to occur when individuals exhibit public sphere CSW because their self-esteem is a function of public evaluations. Thus,

H2: There is a positive relationship between public sphere CSW and engaging in protective self-presentation in response to unwanted other-provided information online.

State-level motivations for impression management: online social networks

The size and diversity of online social networks are associated with strategic self-presentation as well (Leary 1995; Binder *et al*. 2009). Recall that Goffman (1959) compares self-presentation to acting where individuals present themselves in ways that match specific audience expectations. However, because SNS users have such large online networks today, there may be a heightened demand for communication for the purpose of relationship maintenance. Obviously self-disclosure is a critical mechanism which is necessary to develop and maintain relationships. Therefore, as online network size increases, individuals need to produce more self-provided information. Thus,

H3: Online network size has a positive relationship with the amount of self-provided information.

Another network attribute associated with self-presentation is diversity. Today's online networks encompass a wide spectrum of relationships including family, friends, co-workers and colleagues, employers, as well as generally unknown others (Stefanone *et al*. 2008; Hampton *et al*. 2011). While it may be convenient for users to broadcast and share information across these diverse networks, such behaviors may also be problematic because different subgroups within the macro network likely have inconsistent expectations regarding how an individual presents oneself. This is known as the problem of conflicting social spheres (Binder *et al*. 2009). Clearly one's family and close friends have different expectations regarding appropriate images than one's employer. Therefore, presenting oneself to heterogeneous audiences becomes challenging as users attempt to balance these varied audience expectations. Failure to negotiate this balance can result in ineffective self-presentation, relational tension, and ultimately social rejection (Binder *et al*. 2009; Tokunaga 2011). When self-disclosure is risky, humans tend to withdraw from this behavior and disclose less personal information (Rosenfeld 1979). Thus,

> H4: Online network diversity has a negative relationship with the amount of self-provided information available online.

However, there is likely an interaction effect between network size and diversity on self-presentation behaviors. As networks become more diverse, it may become more difficult to adjust self-presentation strategies to accommodate more groups of people (Leary 1995; Binder *et al*. 2009). Therefore, self-disclosure to large audiences may only be effective when those audiences are homogeneous. When audiences are large and heterogeneous, simply increasing the amount of self-provided information may impede successful self-presentation due to the problem of conflicting social spheres described above. Similarly, limiting the amount of self-provided information to prevent this problem may only work when the audience is small. As the network becomes large and diverse, individuals are required to disclose more information to maintain these relationships, even in light of the risks associated with this behavior. Thus,

> H5: There is an interaction between the size and diversity of online networks such that large and homogeneous online networks are associated with the greatest amount of self-provided information.

In addition, network size may also have a relationship with the adoption of protective self-presentation strategies to deal with unwanted other-provided information. Individuals with large social networks likely receive more other-provided information due to the sheer volume of communication. As a result, the probability of problematic other-provided information increases, and individuals are more likely to engage in protective self-presentation (Smock 2010).

H6: Online network size has a positive relationship with engaging in protective self-presentation strategies in response to unwanted other-provided information.

Finally, because of the problem of conflicting social spheres, individuals with diverse networks should be more likely to encounter other-provided information that may challenge the image they strategically present (Binder *et al*. 2009). Hence, they should be more likely to engage in protective self-presentation.

H7: Online network diversity has a positive relationship with engaging in protective self-presentation in response to unwanted other-provided information.

Method

Sample

An online survey was conducted at a large Northeastern University in March 2011. A convenience sample was recruited from an introductory communication class with 458 registered students. This sample was used because undergraduate students are heavy SNS users. An announcement of the survey was made both at class and on a class website, where students interested could find a link to the survey. All procedures and measures were approved by the institutional review board.

After two weeks, 253 participants responded, yielding a 55.2 percent response rate. Five responses were dropped because they reported not using Facebook, resulting in 248 completed surveys. Among the participants, 50.4 percent were male, 33.5 percent were freshmen, 35.5 percent sophomores, 21.8 percent juniors, and 9.3 percent were seniors. The majority of the sample identified themselves as Caucasian (71.8 percent). About 15 percent were Asian, 7 percent were African-American, and 4 percent were Hispanic.

Measures

Online network size was measured following Rosen *et al*. (2010), who demonstrated that individuals are able to accurately recall the size of their online networks and the number of photos they shared. Thus, the following question was used: 'How many total friends do you have on Facebook?' Four outliers were identified and replaced with the mean as a conservative correction to the distribution abnormality ($M = 593.61$, SD $= 432.73$).

Diversity was measured with McCarty *et al*. (2001) 16-item scale assessing a range of social categories (e.g. family, co-worker, etc.). Facebook network diversity was operationalized as an additive index of these items ($M = 8.88$,

SD = 3.16). Although this method was originally used to measure network size, Binder *et al*. (2009) used it to measure network diversity and proved valid.

Public sphere CSW was measured with 15 items (Crocker *et al*. 2003). Participants were asked to report the degree to which they agreed or disagreed with 15 statements about their public sphere CSW on a 7-point Likert scale (1 = Strongly Disagree, 7 = Strongly Agree). Sample items are 'I don't care what other people think of me', and 'my self-esteem is influenced by how attractive I think my face or facial features are' ($M = 4.48$, SD = 0.77, Cronbach's $\alpha = 0.79$).

Self-initiated self-presentation behaviors were operationalized as photos sharing and wall post updating. Although wall post updating is a social grooming behavior, individuals express their opinions in these wall posts, which is a form of self-disclosure (Leary 1995). Consistent with Rosen *et al*. (2010), respondents were asked 'How many photos have you uploaded to Facebook?' Six outliers were identified and replaced with the mean as a conservative correction to the distribution abnormality ($M = 440.13$, SD = 894.15). They were also asked to report the frequency of updating wall posts using a 7-point scale where 1 = Never and 7 = Hourly ($M = 4.15$, SD = 1.42).

Protective self-presentation in response to unwanted other-provided information. Unwanted other-provided information was operationalized as photo tagging and wall posts initiated by someone *other than* the participant in this study, which resulted in discomfort or unhappiness. The dichotomous response items included 'Have you ever been unhappy with a photo in which you were tagged', 'Have you ever been unhappy with the content of a wall post that involved you', and 'Have you ever been unhappy with the content of a wall post that someone posted on your wall'. If they answered 'yes' to any of these questions, they were then prompted to report the protective self-presentation strategy they adopted from a list of predetermined options. The tactics for responding to unwanted photo tagging included 'I asked my friend(s) to remove the photo' and 'I untagged my connection with the photo myself'. Tactics for responding to unwanted wall posts from others that involved the participant include, 'I asked my friend(s) to remove it' and 'I added another post to the wall so I could comment about it'. Strategies to deal with unwanted wall posts posted on the participant's online profile include, 'I removed it' and 'I added another post to the wall so I could comment about it'. These response options were designed to include both repudiative and subtractive strategies and cover the range of photo and text-based content on user's and their online friends' profiles.

Results

Descriptives

Table 1 shows descriptives and zero-order correlations for the scales used in this study. Respondents had on average 593.61 friends (SD = 432.73) and these

TABLE 1 Descriptive statistics and zero-order correlations for variables; means (standard deviation) along the diagonal.

	Public sphere CSW	*Size*	*Diversity*	*Photo*	*Wall post*
Public sphere CSW	4.48 (0.77)	−0.06	0.14*	−0.04	0.09
Size		593.61 (432.73)	0.13*	0.47**	0.15*
Diversity			8.88 (3.16)	−0.05	0.21**
Photo				440.13 (894.15)	0.20**
Wall post					4.15 (1.42)

Note: Male = 0, Female = 1.

*$p < 0.05$.

**$p < 0.01$.

friends fell into 8.88 social categories (SD = 3.16). Participants shared an average of 440.13 photos (SD = 894.15) and reported posting on their own wall roughly every few days ($M = 4.15$, SD = 1.42).

We dichotomized the variable measuring whether or not participants engaged in protective self-presentation in response to unwanted photo tagging (0 = no reaction, 1 = reacted with subtractive strategies). The majority of respondents ($N = 176$, or 71 percent) reported adopting subtractive strategies. Most (152) untagged the photos themselves, and 19 participants asked their friends to remove the photos.

Sixty-two participants (25 percent) reported engaging in protective self-presentation in response to unwanted wall posts that involved them and appeared on *their friends*' profile pages. Thirty-five (about 14 percent) used a subtractive strategy and asked their friends to remove the post. Twenty-two (about 9 percent) opted for a repudiative strategy and added another post to their friend's profile to advocate for themselves.

One hunderd and two participants (about 41 percent) reported engaging in protective self-presentation in response to unwanted wall posts that involved them and appeared on *their* profile pages. Ninety-two (about 37 percent) opted to remove the wall post (subtractive strategy), and only 9 (about 4 percent) added another post in response (repudiative strategy).

Because both questions are similar, we combined them to create a new variable measuring general engagement in protective self-presentation in response to unwanted other-provided wall posts. Responses indicating that participants 'did not care' or had 'never been unhappy' with wall posts were coded as 0 (no reaction; $N = 134$ or 54 percent). Responses indicating that participants managed these wall posts were coded as 1 (reacted with protective strategies; $N = 114$ or 46 percent).

TABLE 2 OLS model explaining number of photos shared and the frequency of wall post updates.

	No. of photos shared		*Frequency of wall post update*	
	β	*SE*	*β*	*SE*
Gender	0.26***	96.66	0.13*	0.18
Size	0.43***	48.92	0.08	0.09
Diversity	−0.05	50.08	0.23**	0.09
Interaction, size and diversity	−0.23***	36.81	−0.08	0.07
Public sphere CSW	−0.04	62.32	0.04	0.11
F, adj R^2	$F(5, 231) = 24.84$***, Adj $R^2 = 0.34$		$F(5, 233) = 4.27$**, Adj $R^2 = 0.06$	

Note: Male = 0, Female = 1.

*$p < 0.05$.

**$p < 0.01$.

***$p < 0.001$.

Hypothesis testing

Ordinary least-squares (OLS) regression was used to test H1, H3, H4, and H5, which address the number of photos shared online. The number of shared photos was entered as the dependent variable. Gender, online network size and diversity, the interaction between size and diversity, and public sphere CSW were entered as independent variables. The model was significant, $F(5, 231) = 24.84$, $p < 0.001$, and explained about 34 percent of the total variance. Gender ($\beta = 0.26$), network size ($\beta = 0.43$), and the interaction between diversity and size ($\beta = -0.23$) demonstrated significant relationships with the number of photos shared (Table 2), supporting H3 and H5.

In order to better understand the interaction between network size and diversity, we first recentered the network size variable and conducted OLS regression to compare the associations of diversity with the number of photos shared when size was large and small. This association was only significant ($\beta = -0.22$, $p < 0.001$) when size was large. We then recentered network diversity and conducted OLS regression to compare the associations of size with the number of photos shared when diversity was high and low. This association was stronger when diversity was low ($\beta = 0.60$, $p < 0.001$) than when it was high ($\beta = 0.25$, $p < 0.001$). Figure 1 was created to visualize this result.

Next, this analysis was replicated using the frequency of wall post updating as the dependent variable. The model was significant, $F(5, 233) = 4.27$, $p < 0.01$, and explained about 6 percent of the total variance. Gender ($\beta = 0.13$)

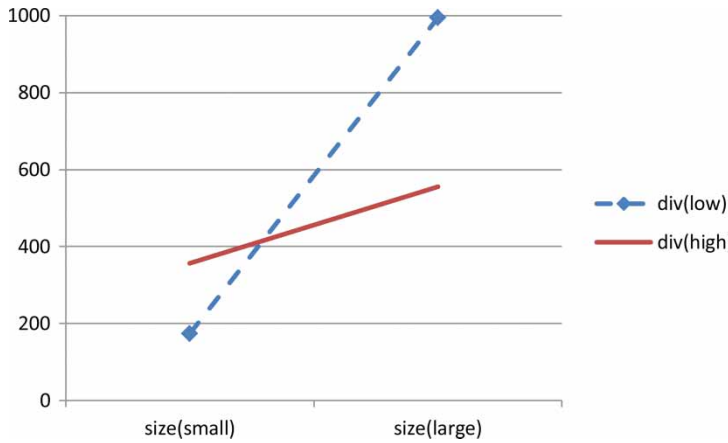

FIGURE 1 Interaction effect of network size and diversity on the number of photos shared. Note: Size split at 593; Diversity split at 8.88.

and network diversity ($\beta = 0.23$) exhibited positive relationships with the frequency of updating wall posts, so none of the hypotheses were supported with regard to wall post updating.

We conducted logistic regression to test H2, H6, and H7 which address engagement in protective self-presentation strategies in response to unwanted photo tagging. Whether participants responded to these situations was

TABLE 3 Standard beta coefficients for logistic regression explaining protective self-presentation in response to unwanted photo tagging.

	Protective self-presentation in response to unwanted photo tagging			
	B	*SE*	*Wald*	*Exp, [CI]*
Constant	−3.74***	1.03	13.33	0.02
Gender	0.85**	0.32	7.22	2.35, [1.26, 4.37]
Size	0.00	0.00	1.98	1.00, [1.00, 1.00]
Diversity	0.11*	0.05	5.09	1.12, [1.02, 1.23]
Public sphere CSW	0.68**	0.21	10.70	1.98, [1.32, 2.99]

Note: Model $\chi^2 = 29.80$***, CI = Confidence Interval, Male = 0, Female = 1, No reaction = 0, reacted with subtractive strategies = 1.

*$p < 0.05$.

**$p < 0.01$.

***$p < 0.001$.

TABLE 4 Standard beta coefficients and standard errors for protective self-presentation in response to unwanted wall posts.

	Protective self-presentation in response to unwanted photo tagging			
	B	*SE*	*Wald*	*Exp, [CI]*
Constant	−5.34***	1.01	28.18	0.01
Gender	0.26	0.28	0.81	1.29, [0.74, 2.25]
Size	0.00	0.00	3.23	1.00, [1.00, 1.00]
Diversity	0.15**	0.05	10.02	1.16, [1.06, 1.28]
Public sphere CSW	0.74***	0.19	14.64	2.10, [1.44, 3.07]

Note: Model $\chi^2 = 36.41$***, CI = Confidence Interval, Male = 0, Female = 1, No reaction = 0, reacted with protective strategies = 1.

**$p < 0.01$.

***$p < 0.001$.

dichotomized (0 = no reaction, 1 = reacted with subtractive strategies) and entered as the dependent variable. Gender, network size and diversity, and public sphere CSW, were entered as independent variables. The model was significant ($\chi^2 = 29.80$, $p < 0.001$, Cox & Snell $R^2 = 0.12$). Gender ($B = 0.85$, $p < 0.01$), diversity ($B = 0.11$, $p < 0.05$), and public sphere CSW ($B = 0.68$, $p < 0.01$) exhibited significant relationships and explained the tendency to engage in protective self-presentation behavior in response to unwanted photo tagging, supporting H2 and H7 (Table 3).

The same analysis was replicated using whether participants engaged in protective self-presentation in response to unwanted wall posts (0 = no reaction, 1 = reacted with protective strategies) as the dependent variable. The model was significant ($\chi^2 = 36.41$, $p < 0.001$, Cox & Snell $R^2 = 0.14$). Network diversity ($B = 0.15$, $p < 0.01$) and public sphere CSW ($B = 0.74$, $p < 0.001$) exhibited significant relationships, supporting H6 and H7 (Table 4).

Discussion

This research was conducted to examine how trait-level CSW and state-level social network structures influence online self-presentation behavior. The motivation for this research lies in the popularity of expansive and increasingly diverse online social networks and the probability that SNS users have to strategically navigate the problem of conflicting social spheres inherent in these networks. Specifically, the impact of orientation toward public sphere CSW, and network size and diversity were measured and used to explain a range of impression

management strategies including self-initiated information sharing and the management of other-provided information. To address the range of information-sharing behaviors available to SNS users today, this variable was operationalized as two prevalent behaviors on SNS: sharing digital images and text-based communication in the form of wall posts. Together, the variables constituting this conceptual model address a range of strategic behavior idiosyncratic to SNS users' alternating roles as senders and receivers in communication processes.

The analyses began by exploring how trait-level variables relate to the presentation of self. First, we found that individuals exhibiting high levels of public sphere CSW reported being more likely to engage in protective self-presentation to manage unwanted photo tagging and other-provided wall posts, by employing subtractive and repudiative strategies. This result suggests that self-esteem maintenance is an important motivation for strategic self-presentation online. In addition, we support Crocker and Wolfe's (2001) argument that self-esteem is not only a global concept, but a construct which is also dependent on specific domains. Individuals with high levels of public sphere CSW tend to stake their self-esteem on outside recognition. Thus, they assign more weight to peoples' judgments about the images they present publicly, and ultimately possess greater motivation to actively manage their impressions online. This suggests that CSW offers an increasingly nuanced approach to understanding self-presentation behavior on SNS. More importantly, these results extend the literature and theory on self-presentation by incorporating novel social exchange processes including the management of other-provided information.

Besides public sphere CSW, *private sphere* CSW may also influence self-presentation. Individuals staking self-esteem on internally oriented CSW may also strategically manage the information that subverts their public images. For instance, if one stakes self-esteem on virtue, he/she may also want to untag their images portraying alcohol consumption not because of the concern about their public impression, but because consuming alcohol may be considered immoral and thus a threat to self-esteem. Exploring how private CSW influences self-presentation online is a viable area for future research.

In addition to CSW, another trait-level variable that may affect self-presentation on SNS is discrepancies between one's actual and ideal public image. Traditional CMC facilitates idealized self-presentation because users have absolute control over information about themselves. The multi-source nature of contemporary SNS makes it likely that there may be some information on one's profile page that presents large discrepancy from his/her ideal public images. Leary and Kowalski (1990) suggest a positive relationship between discrepancy of actual-ideal images and protective self-presentation. Furthermore, this relationship may be moderated by public CSW that individuals staking self-esteem on public recognitions and encountering large discrepancy of actual-ideal images are the most likely to engage in protective self-presentation. Future research should address these hypotheses.

In addition, this research examined how social network characteristics relate to self-presentation behaviors at the state level. Network size was positively associated with the number of photos shared, as hypothesized. This finding supports previous research on the relationship between network size and self-presentation behaviors (Stefanone *et al*. 2011). Furthermore, our results suggest one additional function of self-initiated photo sharing: relationship maintenance (Miller & Edwards 2007). As network size increases, so too do the demands associated with maintaining a range of interpersonal relationships. As a result, individuals may feel pressure to disclose more about themselves to maintain reciprocal social exchange. Thus, we link self-presentation with personal network maintenance because keeping positive public impressions helps maintain existing relationships and develop new relationships. Future research should investigate motivations for self-presentation from the perspective of relationship maintenance and explore the impact of self-presentation on personal relationships.

We did not find any relationship between network size, wall post sharing, and managing other-provided information. One explanation is that wall post sharing is one-to-one communication and more likely happens between close contacts. However, given that the majority of SNS networks are weak ties, network size is not a valid indicator of the number of meaningful relationships, and thus may not be related to sharing wall posts. For similar reasons, although larger networks may lead to more unwanted other-provided information, individuals are unlikely to bother responding to this information.

Network diversity was consistently associated with engaging in protective self-presentation in response to unwanted other-provided information. This finding first provides empirical evidence for the problem of conflicting social spheres. Diverse networks make it more difficult to balance the often contradictory expectations of network members, so they may prompt individuals to engage in protective behavior when they detect unwanted other-provided information. More importantly, in order not to subvert the idealized image individuals want others to hold of them, they and their SNS contacts need to reach agreement on what is acceptable to publicize. Therefore, impression management in multi-source communication environments like SNS requires coordination between users about the boundaries for information sharing. This is a promising area for future research.

Results also show that individuals with heterogeneous networks updated wall posts significantly more often, opposite of the expected relationship. One explanation may lie in the content of these wall posts. A common communication strategy intended to protect individuals from criticism involves making neutral statements which are acceptable to a wide range of diverse people (Arkin 1981). This strategy is replicated online and termed 'the lowest common denominator' by Hogan (2010), only disclosing information appropriate to all members of the network. This tactic may be strategically employed to

solve the problem of conflicting social spheres inherent in expansive online social networks. Future research would benefit from analyzing the *content* of self-presentation on SNS to explore how this strategy applies to heterogeneous audiences.

One promising finding is the interaction effect between network size and diversity, and online photo sharing. Sharing photos facilitates the recollection of common memories and helps sustain relationships (Mendelson & Papacharissi 2010). Individuals with large networks have increasing demands for relationship maintenance, which results in increased photo sharing. However, this becomes risky as network diversity increases because of conflicting social spheres. Therefore, sharing more photos to large and heterogeneous audiences may have a boomerang effect on self-presentation because individuals may disclose information contradictory to the expectation of some audience segments.

In addition, recall that network diversity exhibited a positive relationship with wall post updating but a negative relationship with photo sharing only when online networks were large. This suggests that individuals may adopt different self-presentation strategies with text-based and visual modes of disclosure. It may be more difficult to make neutral statements with visual images than text, so individuals may simply reduce self-disclosure when they share photos with diverse networks. However, they can more carefully manage their language via text-based wall posts, which may make this venue more appealing. Future research can employ content analysis to compare self-presentation strategies SNS users adopt when sharing photos and wall posts.

Although we did not propose any specific hypotheses about gender, it was found to demonstrate consistent relationships with self-presentation behavior. Female participants shared more photos and updated wall posts more frequently than males in our sample. This finding supports previous evidence demonstrating that females tend to share more personal information online and this gender difference was most pronounced in the context of shared digital photos (Stefanone *et al*. 2011). Recall that females were more likely to engage in protective self-presentation in response to unwanted photo tagging. This difference may result from the sociocultural influence on women about their physical appearance (Park *et al*. 2009). Thus, women tend to be more concerned about their appearance and exhibit greater motivation to protect their physical images. Perhaps not surprisingly, this suggests that the traditional image-based value system which highlights the importance of female image in our society persists today.

Limitations lie in the method used in this research and the operationalizations of some variables. We used single-item scales to measure network size and the number of photos shared. Although single-item data can be unreliable, Bergkvist and Rossiter (2007) and Wanous and Hudy (2001) demonstrate how single items function similar to multiple items in terms of reliability and predictive validity when precise and singular objects are measured.

In spite of the limitations, results from this research illustrate tactics for self-presentation online that allow for other-provided information. For instance, when broadcasting to heterogeneous audiences, individuals should choose private communication channels or block certain members from viewing content. Many online tools enable users to group their network members into different categories, and this is another tactic which can be employed to mitigate the problem of conflicting social spheres. The problem with other-provided information also lies in the ambiguity of its ownership (Besmer & Lipford 2010).Uncertainty likely exists about whether tagged photos belong to the individuals being tagged or those initiating the tagging. As a response to this problem, the design of these tools may be improved by making photos invisible until all involved parties linked to the photo consent to tagging requests.

This research presents a step forward towards the understanding of self-presentation behavior online that allows for other-provided information. We not only investigated motivations for sharing self-provided information, but also contribute to research on impression management in the face of other-provided information. This is one of the many new challenges in contemporary CMC environments. Among the most important findings is that network diversity and public sphere CSW motivate the management of unwanted other-provided information. Together, these results provide evidence that self-presentation is a function of self-audience interaction influenced by self-esteem at the trait level and network structures at the state level. Contingencies on which individuals stake self-esteem and perceived self-discrepancies represents a new approach to understanding how personalities shape the development and management of identity online. This manuscript provides a framework for future explorations on personal information sharing and impression management in new media environments.

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