

# Online and Offline Social Networks: Investigating Culturally-Specific Behavior and Satisfaction

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## Abstract

*Research shows that people from different cultural backgrounds and gender roles behave and communicate in systematically different ways. The current research utilized a survey (N=452) of young adults to examine the occurrence of culturally- and gender-influenced differences in online behavior, offline networks, and satisfaction. Results show that participants who identify with more individualistic cultural backgrounds have larger networks of friends on social network sites (SNSs), have a greater proportion of these friends not actually met face-to-face, and share more photos online opposed to participants who identify with less individualistic cultural backgrounds. Social support network size was a significant predictor of satisfaction with life, while SNS network size was not. Findings suggest that participants who identify with more individualistic cultural backgrounds tend to self-promote and are better connected and more satisfied with their social lives. It seems offline networks are more important than mediated networks in terms of psychological well-being.*

## 1. Introduction

As new communication technologies continue to diffuse around the globe and into daily life, they impact and influence the social world in complex ways. Computer-mediated communication (CMC) platforms, such as social networking sites (SNSs), are increasingly used to mediate interpersonal relationships, and navigating an environment of mediated personal identities has become a critical social skill [Author, 2008]. Developing these skills allows people to make instrumental communicative decisions about their mediated identities that allow for specific outcomes. As such, one's purposeful, instrumental actions online become an important element in managing social relationships.

One aspect of this emerging mediated social context is that the boundaries of interaction are no longer confined by geography, allowing people from diverse cultures to interact with increasing ease. Since many CMC platforms allow users to create their own "profiles" or identities, and impressions formed in CMC environments can often be more intense than those formed in face-to-face environments [1], it is useful to understand how people who identify with different cultural backgrounds use Internet-based communication tools to present themselves and interact with others. A better understanding of how people from different cultures use CMC to network will catalyze the creation of SNSs that better accommodate the characteristics of their users. Due to a lack of literature investigating the relationship between culture and online networking behavior, the current research investigates the relationship between computer-mediated communicative behaviors, culture, and gender to explore whether culturally-influenced and gender-influenced behaviors normally associated with face-to-face communication emerge as patterned behavior in CMC.

In this paper, literature on both gender-specific and culture-specific communicative styles and behaviors frames an investigation into the use of a specific Web 2.0 technology: SNSs. Literature is reviewed on CMC technologies with emphasis on SNSs, followed by a review of broad cultural differences in behavior. In the current research, systematic gender differences in behavior are conceptualized to operate similarly to traditional cultural differences [2], discussed below. The literature review concludes with hypotheses about the differential uses of SNSs as related to culture and gender. Methodological procedures are discussed, followed by results, discussion of limitations and implications for future research.

## 2. Social Networks and Social Support

In general, the focus of social network studies is on the relationships between social entities [3] and the

systematic analysis of patterns of relationships between people. Social network studies that focus on patterns of interactions between actors situated in a network offer predictive capabilities regarding individual attitudes and behavior. Social and behavioral sciences continue to become more interested in social networks because the “relation” is utilized as the unit of analysis as opposed to the analysis of attribute data common in survey research; the focus is on the relationship between people.

CMC researchers are increasingly framing their pursuits in the context of social capital, and the relationship between social capital and CMC [4]. Social capital is a notoriously nebulous term, but generally refers to the ability of actors to secure benefits by virtue of membership in social networks or other social structures [5]. Social support is one such form of capital, and social support can often come from one's strong ties, or strong tie network (STN). Ellison, Steinfeld and Lampe [4] examined social capital in the specific context of SNS use. Ellison et al. surveyed college students about their use of Facebook and measured a range of usage behaviors, psychological traits, and social capital and found a positive correlation between Facebook participation and many forms of social capital, noting that while general Internet use did not predict access to social support (bonding social capital) Facebook use was a significant predictor. As Ellison et al. [4] note, this finding warrants the examination of the specific types of online behaviors in the search for explanations of social outcomes.

In the present study, we propose that systematic differences in SNS use result from different cultural identities. Specifically, people from individualistic cultures are likely to engage in more attention-seeking behaviors via these sites, opposed to those who identify with collectivistic cultures. Further, considering gender as culture, males are likely to instrumentally extend the reach of their network by seeking new networked relationships, while females will utilize information technology to nurture their existing relationships. Below a review of research on CMC, Web2.0 and culture is presented, followed by hypotheses and research questions.

### 3. CMC and Web 2.0

A plethora of research on CMC has been conducted over the last twenty years, and much of this research has compared CMC to face-to-face (F2F) communication in a quest for a greater understanding of how these two forms of communication actually differ. On the other hand, some research has focused on the social contexts created by CMC as uniquely

distinct from F2F interaction. In an important piece of early CMC research, Spears and Lea [6] found that the general social context in CMC is the subject matter of the interaction. Further, they differentiate personal identity and social identity. Personal identity is an individual's multifaceted understanding of himself or herself. Whereas one's social identity derives from people's presentation of identity as part of group membership or the taking on of a social role within the interaction. CMC therefore is a medium that heightens awareness of the social and socially constructed identities. Such extra self-awareness produces differing results dependent upon the social context, and is particularly important to consider given the richness of emerging communication technologies, discussed below.

More recently, research attention has shifted towards use of CMC to support existing relationships, like weblogs [Author, 2007] and social networking sites [7] [8]. This parallels a shift in the way Internet users are afforded more opportunity to create and actively manage online content, often referred to as Web 2.0.

Traditionally media content has been the product of media companies, but new user-created and user-focused online platforms such as Facebook and MySpace have emerged as a focal point for content creation and social interaction. Additionally, recent research found that over 95% of college students have SNS profiles [9]. boyd [7] discussed notions of culture and subculture, and how SNSs allow users to both learn and perpetuate cultural norms and cues.

A SNS provides a multifunctional platform for personal online content creation, including photo and video sharing, text messaging, commenting on other users' content, blogging, and the main functionality, displaying with whom one is “friends.” This so-called friending allows users to visualize their social network of connections in a photo-based display. SNS friends have access to the content of each other's personal profile, which is often not visible to non-friends through the use of privacy settings. However, given the widespread international usage of many different SNSs, research on how different cultures utilize the large array of behavioral and communicative functionalities of SNS is called for.

### 4. Culture

Hofstede [10] defined four basic dimensions for characterizing cultures: power distance, uncertainty avoidance, masculinity, and individualism / collectivism. At that time, individualism and collectivism were treated as polar opposites. Hofstede defined increased individualism as the tendency to place one's own needs above the needs of one's in-

group, and decreased individualism as a tendency to place the needs of one's in-group above one's own needs. Subsequent research has shown individualism to be multidimensional and identified key features of increased individualism like tendencies toward self-reliance, self-promotion, competition, emotional distance from in-groups and hedonism. Collectivism is also a complex construct and can be characterized by closeness to family, family integrity, and sociability [11] [12].

National identity has been used to study culture and is associated with a diversified field of research, drawing some criticism and parallel methodologies, discussed below. It has been established that individual nation states are broadly associated with a more or less individualistic culture, and many researchers have compared countries along the lines of individualism [10] [12]. For example, western societies are considered higher on the individualism scale, whereas Asian, African and South American societies are considered lower on the individualistic scale [12].

Hofstede's [10] early research on individualism and collectivism treated the two as polar opposites at two sides of the same scale. Recent findings have pointed to a conclusion that these two concepts may indeed be related to different indicators, and should be studied independent of each other due to issues of imbalanced keying in the scale producing within-subject standardization [13]. Schimmack et al. [13] also point out that there have been more methodological issues, as well as national variation, when analyzing collectivism, and that individualism has remained more constant through time. Thus the current research conceptualizes differences between cultures as more or less individualistic since this characteristic of culture is not theoretically attached to collectivism, but is more stable on the national level.

There is some criticism of using nation states as indicative of cultural identity in the literature. Oyserman, Coon, and Kemmelmeier's [14] meta-analysis suggests that there are problems with the measurement of individualism and collectivism using traditional scales, as there is a lack of convergent validity when comparing their construct findings with that of Hofstede. Schimmack et al. [13] present findings that point to the opposite, and propose that methodological issues with data collection, such as respondents having different semantic understanding of terminology in the scales, as well as the context that the data is collected in (e.g. school, business), produces widely different results across research findings. Schimmack et al. [13] also point out that national differences in individualism have remained highly stable since Hofstede [10] first measured individualism, and that that national differences in individualism will remain in the near future. Hofstede

[15], updating his earlier findings, stated that although individualism has risen globally, the rank ordering of nations on individualism has remained stable.

Yet, not considering within-country cultural variation could lead to an overgeneralization of attributes because nations are made up of people from diverse national backgrounds [16]. The current research took this into consideration and does not conceptualize all respondents as culturally similar if they are living in a specific country; rather, respondents are asked what ethnic and cultural background they identify themselves with, and to what extent they identify with that culture. As pointed out above, differences of culture have remained stable on the aggregate, national level, so garnering which culture one identifies with is likely to yield a valid measure of cultural identity [13]. Additionally, the most frequently reported results of within-country variation of individualism concern gender differences [16], which are also investigated in the current research, controlled for in statistical models, and discussed below.

Given the lack of methodological clarity in the literature regarding the validity of individualism being measured at the individual level, the current exploratory research uses the more traditional conceptualization of the nation state as indicative of a more or less individualistic culture. There are additional limitations when using this conceptualization of culture, discussed further in the limitations portion of the discussion section presented after results below.

#### 4.1 Gender as culture.

Gender can refer to the way that society constructs discourses and behaviors around the biological differences of sex. The current research conceptualizes gender as the biological differences of sex. Eagly [17] proposes that gender-specific behavior is a product of roles assigned to people based on biological sex. Much of the research on gender as culture focuses on the construction of social and cultural differences between genders, as well as the importance of social practices in expressing these identities [18].

Language use has historically been the main level of analysis within the gender as culture research stream. Maltz and Borker [19] established the gender-as-culture hypothesis by analyzing language use by males and females, finding that men and women come from different sociolinguistic subcultures. Maltz and Borker conceptualized culture as a shared system of symbols, values, and practices that do not necessarily reflect special borders. This conceptualization of culture is familiar to intercultural research [20], allowing for theoretical common ground to exist regarding gender and culture. Here, people who exhibit systematic

differences in behavior consistent with gender are operationalized as identifying with different cultures.

Mulac, Bradac, and Gibbons [21] extended the research by Maltz and Borker by using intercultural dimensions and analyzing language use between men and women, and also suggest that men and women represent different cultures. Findings indicate that specific communicative features favored by males and females differ along the individualistic and collectivistic dimensions derived from the intercultural communication research [20]. Results are consistent with research on differences between national cultures [22], but not for subcultures within one nation.

The notion that gender forms two distinct subcultures is echoed by Gudykunst and Kim [23], who suggest "there are cultural differences in gender roles" (p. 112). They found that differences in the way that men and women communicate might be thought of as subcultural differences. It is in this sense that men and women are seen as socialized into distinct subcultures with unique attitudes about the way they communicate [19] [24].

## 4.2 Culture, Gender, and CMC.

The communication theory of identity (Hecht, Warren, Jung, & Krieger, 2004) posits that the identity of an individual is not only projected through his/her communication, but that the communication act is part of the self. Hence, communicative behavior should reveal some of the characteristics constituting cultural identity of the self, regardless of medium. However, few studies of the impact of culture on SNS use have been conducted, as is pointed out by boyd and Ellison [27].

Broader examinations of online communicative behavior have also found cultural differences. Kim and Yun [8] found that a Korean SNS reflected many of the collectivistic notions of Korean culture. Specifically, the majority of participants utilized the SNS to maintain close relationships with a small number of ties instead of creating new connections with people; findings are in line with previous constructions of collectivistic culture. On the other hand, having large numbers of SNS friends not actually met in person [Author, 2008] may represent the desire to meet new people or be seen by many people, rather than simply to maintain relationships. This type of friending behavior would be consistent with individualistic cultural identities. The practice of promiscuous friending sacrifices the privacy of the other friends and family in exchange for instrumental personal gains, thus representing a more self-focused behavior.

Several research streams have investigated systematic differences in communicative behavior based on gender. An exhaustive review of the gender

and communication research is beyond the scope of the current research; rather, this section reviews some general findings from gender and communication research, along with CMC-specific research findings.

Men and women are socialized in different ways and consequently develop different communication styles [24]. Through gender role socialization males are held to value status, whereas females are believed to increasingly value affiliation or connection [17]. Therefore, gender-preferential communication styles are competitive and cooperative, respectively [24].

Herring [28] discovered differences in participation between men and women on academic discussion boards. Although participation varied by discussion topic, women consistently participated more in topics related to gender differences compared to theory-related discussions. Herring identified different features that were attributed to different gender language styles, and concluded that gender is identifiable by language content, even without the social context cues.

In contrast to the primarily textual CMC environments examined in earlier CMC research, SNSs present a more visual context where a participant's gender is explicit and unambiguous. Lenhart and Madden [25] found that gender differences in language choice are clearly observable on social networking sites. Therefore, in social networking sites where social and gender context cues are available from posting, participants may spend time reviewing friends' sites in order to better understand what is socially appropriate presentation of themselves [7]. Together, the research above suggests that systematic differences in behavior based on gender persist online.

The evidence summarized above suggests that systematic differences in behavior manifest online should be apparent among people from different cultures, and that these differences correspond to cultural identity. Further, research shows that online behavior differs based on gender. Considering that people from individualistic cultures behave in more self-serving ways and are generally more likely to pursue attention, the following hypotheses are proposed:

H1. SNS users who identify with more individualistic cultures have larger networks of friends online, opposed to users who identify with less individualistic cultures.

H2. SNS users who identify with more individualistic cultures have larger proportions of friends not met online, opposed to users who identify with less individualistic cultures.

In addition, if gender is understood as a cultural variable, it may also affect online behavior in predictable ways. Women may be more likely to utilize social network technologies to nurture and maintain

existing relationships [25], while men may tend to use the technology to extend their social networks. Thus:

H3. Male SNS users have a larger proportion of online friends not met in person than females.

The following research question is included to address the impact of offline social network characteristics on online behavior:

RQ1: What is the relationship between traditional STN size and behavior on SNSs?

Because cultural identity should result in different structural properties of online social networks, it is likely that users will devote different levels of cognitive and temporal resources to these relationships. However, it is uncertain what the demands of SNS relationships may be considering many of these online “friends” may actually be strangers, consistent with H3. Thus, the following research question is proposed:

RQ2: What is the effect of identifying with a more or less individualistic culture and gender on time spent maintaining profiles on SNSs?

While all SNS users engage in friending behavior online, these communication platforms also facilitate photo sharing among network members. Sharing one’s photos online is a form of self-promotion, as it is a method for people to signal aspects of their identity and affiliation to others. Further, the primacy of the female image and appearance, as opposed to the male image, is a well-identified (if culturally problematic) component of most contemporary, media-saturated societies [29]. It is therefore likely that people who identify with more individualistic cultures are more likely to engage in this self-promotion [11] as are women. Thus,

H4. SNS users who identify with more individualistic cultures share more photos of themselves online, opposed to users who identify with less individualistic cultures.

H5. Female SNS users share more photos of themselves online than male users.

If people who identify with more individualistic cultures share more photos of themselves online, and female participants engage in similar behavior, then it is likely that the interaction between gender and culture should result in even greater levels of photo sharing online. Thus,

H6. Female participants who identify with more individualistic cultures share the most photos of themselves online.

Finally, the following research question is proposed to explore outcomes associated with social networks and SNS use. Considering findings that suggest social benefits accrue to SNS users [4], the current study explores the relative contributions of traditional, offline social support networks and networks mediated via SNSs. Thus,

RQ3: What is the relationship between SNS users’ online and traditional network characteristics, and satisfaction?

## 5. Method

Because some of the dependent variables used in this study were single item measures, a pilot study was conducted to test the validity of these measures in terms of the accuracy of respondent recall. Two of the four dependent items were selected to test in the pilot study: the size of mediated networks and the number of photographs shared. These items were chosen because objective measurement of these variables is easily accessible by simply viewing online profiles. One hundred students volunteered from an undergraduate class and were given research credit for participating in this pilot study. They were asked to first recall the size of their SNS networks and the number of photos of themselves they share online, and report those numbers. Upon collecting these responses, participants were then required to log on to their networking site profile page and record the actual numbers of friends and photos shared.

Fifty-three participants were female. The majority of respondents were Caucasian, and the entire group averaged 19.5 years ( $SD = 1.87$ ) of age. For the recall data, participants reported an average of 259 network contacts ( $SD = 202$ ) and an average of 84.4 photos shared ( $SD = 73.8$ ). Pearson correlation coefficients between the recall and actual data were .64 and .61 for network size and number of photos shared, respectively.

To determine if systematic differences existed in recall based on age and gender, and to test how well recall data predicted actual data, two separate regression models were calculated. The model predicting network size was significant ( $F(3, 100) = 33.15, p < .0001$ ); the recall variable was the only significant predictor ( $\beta = .61, p < .0001$ ) of actual network size. Similarly, the regression model for number of photos shared was significant ( $F(3, 100) = 29.05, p < .0001$ ), and the recall data was the only significant predictor ( $\beta = .59, p < .0001$ ). These results suggest that college students are able to recall the size of their online networks and the number of photos shared with a fair amount of accuracy, and no systematic differences were apparent in terms of age or gender.

For the main study, a total of 453 online surveys were completed by a sample of university students, and a series of t-tests were used to ensure these participants did not significantly differ from pilot study participants in terms of age and gender. All participation was voluntary and the University Institutional Review

Board for Human Subjects approved all materials. Data was gathered from two separate universities to capture more authentic cultural identities. One university was a large university in the northeastern United States, and the other was a large, multicultural university in the Pacific basin with a majority proportion of students representing Asian culture and identity. The student population at the Pacific university is in a city that is more than 50% Asian with a very strong Asian culture.

Approximately 58% of the sample was female; the average age of participants was 20.3 years ( $SD = 2.6$ ). These participants did not significantly differ from pilot study participants in terms of demographic makeup. The participants were asked, "Which of the following BEST describes your ethnic or racial background?" The majority of participants identified their ethnic background as Caucasian (approximately 62%). About 16% were Asian, 6% were African-American, and 3% were Hispanic. The rest (about 13%) identified with a variety of other ethnicities. In terms of cultural identity, however, when asked "Which of the following best describes the cultural background you most identify with?" 319 participants identified with Mainland America (MNA), while only 96 participants identified with the Asia-Pacific Region (APR). To be consistent with cultural tendencies, respondents who identified with Japan, China, and the Philippines were selected to represent APR. The rest of the participants ( $n = 38$ ) identified from a variety of other cultural backgrounds and were eliminated from the analyses. To check for the strength of participants' identity with their cultural backgrounds, they were asked on a 7-point Likert scale, "To what extent do you identify with this cultural background?" (MNA,  $M=5.35$ ,  $SD=1.62$ ; APR,  $M=5.53$ ,  $SD=1.49$ ). In a conservative approach to balance cell sizes for the analyses, a random sample of MNA cases were selected from the data. This resulted in MNA and APR group sizes of 98 and 96, respectively.

Upon randomly sampling from the larger MNA population, approximately 60% of the sample was female; the average age of participants remained at 20.3 years ( $SD = 2.6$ ). 58.5 per cent of participants identified their ethnic background as Caucasian. About 20% were Asian, 6% were African-American, and 3% were Hispanic. The rest (about 11%) identified with a variety of other ethnicities.

Because people have the capacity to accurately identify people they have frequent interaction with [30], offline (traditional) STN size was measured using a single item that explained the specific characteristics of strong tie affiliations in detail. Specifically, the question stated, "A strong tie is defined as a person you have known for a long time, have frequent communication with, and positive feelings for. Strong tie relationships include your immediate family

members, as well as close friends. How many strong ties would you say you have?" SNS use was measured by asking participants to report how much time on an average day they spend online managing their SNS profiles (in hours and minutes), the size of their online networks, the proportion of those SNS contacts not met, and the number of photos of themselves shared. Satisfaction with social life [31] assesses the degree to which individuals feel they have sufficient contact and communication with friends and family, and was measured with 5 items (Cronbach's  $\alpha = .76$ ), and the general satisfaction with life scale [31] (4 items) demonstrated a reliability of .74.

## 6. Results

For the traditional STN variable, participants reported an average of 9.0 strong tie contacts ( $SD = 6.3$ ). Participants also indicated having an average of 248.9 ( $SD = 217.1$ ) SNS friends, spent an average of 56.3 minutes per session ( $SD = 51.1$ ) logged into their accounts, and reported that the proportion of their SNS friends had not been met in person was 11 percent ( $SD = .20$ ). This variable was heavily skewed to the right and was log transformed to normalize the distribution for analysis (transformed  $M = 1.02$ ,  $SD = .59$ ). Finally, the photo sharing variable was heavily skewed right ( $M = 71.9$ ,  $SD = 68.6$ ) and was log transformed to normalize the distribution (transformed  $M$  and  $SD = 1.57$  and  $.79$ , respectively).

T-tests were used to determine whether participants from both cultural groups were comparable in terms of age and education; these tests resulted in non-significant differences. MNA participants reported a mean age of 20.5 ( $SD = 2.9$ ) and educational level of 1.6 ( $SD = 1.0$ ), and APR participants reported a mean age of 19.9 ( $SD = 1.6$ ) and educational level of 1.1 ( $SD = 1.0$ ). Cultural differences in social network structure were apparent, however, as MNA participants reported an average STN size of 10.1 ( $SD = 7.5$ ) while APR participants claimed only 7.8 strong ties ( $SD = 6.1$ ,  $t(194) = 4.74$ ,  $p < .01$ ). Further, APR participants reported significantly fewer SNS friends ( $M = 172.5$ ,  $SD = 162.4$ ) than did MNA participants ( $M = 310.5$ ,  $SD = 237.2$ ,  $t(194) = 2.70$ ,  $p < .001$ ).

In terms of well-being, cultural differences were apparent between groups in this study. MNA participants reported higher general satisfaction than APR participants ( $M = 4.6$ ,  $SD = 1.2$  vs.  $M = 4.2$ ,  $SD = 1.1$ ,  $t(194) = 2.93$ ,  $p < .01$ ) and with their social lives in particular ( $M = 4.8$ ,  $SD = 1.2$  vs.  $M = 4.5$ ,  $SD = 1.1$ ,  $t(194) = 2.68$ ,  $p < .01$ ). Finally, the cultural groups exhibited differences in their use of social web applications. MNA participants indicated that 14.7% of their listed "friends" on social network sites have not

been met in person, in contrast to the 5.7% of unmet friends in APR participants' friend lists ( $t(194) = 3.42$ ,  $p < .001$ ). Participants differed systematically by gender, as well. Female participants had larger SNS networks ( $t(194) = 2.16$ ,  $p < .05$ ), and had higher general satisfaction ( $t = 4.05$ ,  $p < .001$ ) and satisfaction with their social lives ( $t = 2.48$ ,  $p < .05$ ).

To test the specific hypotheses and address both research questions, a series of ordinary least squares (OLS) regression models were calculated to control for a set of demographic variables including age, gender and STN size (or, traditional social support network). Results for both sets of analyses are presented in Tables 1 and 2.

Results in Table 1 suggest that although MNA participants do not spend more time managing their profiles, they do have significantly larger mediated networks ( $\beta = -.291$ ,  $p < .001$ ), and have larger proportions of those network relationships not actually met F2F ( $\beta = -.274$ ,  $p < .001$ ). Both models predicting time management and SNS size were significant, and explained 4 and 15 percent of variance, respectively. Both hypotheses 1 and 2 were supported.

Results show that only cultural identity predicted the proportion of network contacts not met, and these results do not support hypothesis 3. In this model cultural identity functions as a unique predictor of friending behavior online; this variable demonstrated a significant relationship with the dependent variable in three out of four models presented in table 1. Further, younger participants spend significantly more time managing their networks, have larger networks and engage in photo sharing to a greater extent than older participants.

Research question 1 addressed the relationship between offline networks and behavior on SNSs. The results suggest that larger STN are not significantly related to time spent online managing SNS profiles ( $\beta = -.085$ , ns), but positively related to SNS network size ( $\beta = .167$ ,  $p < .01$ ) and photo sharing ( $\beta = .097$ ,  $p < .05$ ). STN network size did not have a significant relationship with the proportion of friends not met on SNSs.

Although female participants spend more time managing their profiles online ( $\beta = -.153$ ,  $p < .01$ ), there were no systematic differences in terms of the traditional culture measures and time spent online. This finding addresses Research Question 2.

Results in Table 1 also suggest that participants who identify with more individualistic cultures share significantly more photos online, as hypothesis 4 predicted ( $\beta = -.362$ ,  $p < .001$ ). This model explained 20 per cent of the variance in photo sharing via SNSs. These results also suggest that younger female participants are the most enthusiastic users of these online tools, as they spend more time managing their

profiles and share photos of themselves ( $\beta = -.196$ ,  $p < .001$ ), support for hypothesis 5.

An interaction term was created to account for the compound effects of female participants who identify with more individualistic cultures, and entered into the regression model to test hypothesis 6. This variable was not significant and was omitted from table 1 because it did not moderate any of the other relationships in the regression model. Hypothesis 6 was not supported.

**Table 1. Standardized betas for models predicting SNS behavior.**

	<u>Model 1</u> <i>Time Managing Profile</i>	<u>Model 2</u> <i>SNS Network Size</i>	<u>Model 3</u> <i>Proportion not Met</i>	<u>Model 4</u> <i>Photo Sharing</i>
Age	-.112*	-.151**	.017	-.099*
Gender	-.153**	.079	-.033	-.196***
STN Size	-.085	.167**	.044	.097*
Cultural Identity	.080	-.291***	-.274***	-.362***
<i>F</i> (4, 194),	3.91,	14.27,	7.53,	24.17,
Adj. <i>R</i> <sup>2</sup>	.04**	.15***	.06***	.20***

Note: \* =  $p < .05$ , \*\* =  $p < .01$ , \*\*\* =  $p < .001$ . For Gender,  $F = 1$ ,  $M = 2$ ; Cultural Identity, 1 = MNA, 2 = APR.

**Table 2. Standardized betas for models predicting satisfaction.**

	<u>General Satisfaction with Life</u>		<u>Satisfaction with Social Life</u>	
	<i>Traditional</i>	<i>SNS</i>	<i>Traditional</i>	<i>SNS</i>
Age	-.064	-.053	-.105*	-.125*
Gender	-.261***	-.259***	-.202***	-.206***
Cultural Identity	-.168***	-.125*	-.117**	-.121*
Network Size	.127***	.069	.193***	.005
<i>F</i> (4, 194),	14.65,	8.70,	12.58,	5.83,
Adj. <i>R</i> <sup>2</sup>	.13***	.09***	.11***	.06***

Note: \* =  $p < .05$ , \*\* =  $p < .01$ , \*\*\* =  $p < .001$ . For Gender,  $F = 1$ ,  $M = 2$ ; Cultural Identity, 1 = MNA, 2 = APR.

The models in Table 2 suggest that STN size had the strongest relationship with both general satisfaction ( $\beta = .127$ ,  $p < .001$ ) and satisfaction with social life ( $\beta = .193$ ,  $p < .001$ ). These models explained 13 and 11 percent of the total variance respectively. Interestingly, SNS network size was not significant in either model. Female participants consistently reported significantly higher satisfaction across all conditions. Further, MNA participants reported higher satisfaction in each model, as well.

## 7. Discussion

Results from the study demonstrate that there are indeed differences in the way that people who identify with different cultures, based on both national identity and gender, manage their communicative behaviors within SNSs. Although all hypotheses were not supported, several significant findings help to better understand these differences.

Several hypotheses were offered regarding SNS friending behavior. Hypothesis 1, which proposed that SNS users who identify with more individualistic cultures have larger networks of friends online, opposed to users who identify with less individualistic cultures, was supported. This finding indicates that people who identify with individualistic cultures maintain a larger accessible pool of mediated ties. Individualistic cultures tend to place greater importance on individual achievement, so the maintenance of a larger network facilitates an increased ability to leverage resources.

What has emerged as a unique behavior in SNS friending behavior is in the proportion of friends not met, i.e. promiscuous friending. The act of promiscuous friending is a unique communicative behavior that has been largely catalyzed by SNSs. Many people keep in touch with large numbers of their friends and family in a variety of ways (which would be represented by the raw number of friends online), but until CMC became mainstream it was far less common to share directed contact and private information with individuals that one had not met in person. Further, the measure of social promiscuity in this study is a proportion, and therefore controls for network size.

To address the promiscuous friending behavior, hypothesis 2 proposed that SNS users who identify with more individualistic cultures have larger proportions of friends not met online in contrast to those who identify with less individualistic cultures, and was supported. By friending unknown people, these SNS users are sacrificing the personal privacy of their entire SNS network. This can be understood as promoting an individualistic goal (increasing the size of the personal social network) at the expense of the collective (exposing the existing personal network to unknown and potentially unwanted social contacts).

The support of hypotheses 1 and 2 indicates that prior research on the cultural tendency of more individualistic cultures engage in personal self-promotion in offline contexts has been mirrored online, where SNS users who identify with more individualistic cultures engage in personal self-promotion through large friendship networks as well as promiscuous friending. A possible explanation of these

findings is that personal self-promotion is closely related to creating ties with unknown people. Conversely, it also make sense that people who identify with less individualistic cultures, valuing family and in-group ties, are less likely to sacrifice their in-groups' private information to extend their online network.

Hypothesis 4, which indicated that SNS users who identify with more individualistic cultures share more photos of themselves online, opposed to users who identify with less individualistic cultures, was supported. This finding indicates that MNA individuals made use of Web 2.0 technology to engage in self-promotion. Sharing photos online is a form of self-promotion and established a great personal presence amongst networked contacts. Paired with the findings from H1 and H2, this finding paints a picture of online cultural behavior that supports past theory and research on individualistic cultures. Individualistic people tend to engage in self-promotion, are more likely to and place the needs of the self above the needs of the in-group for the purpose of achievement.

Since one of the main goals of the current research is to investigate the degree to which offline behaviors persist online, research question 1 queried the relationship between traditional STN size and behavior on SNSs. The main finding is that SNS users who maintain larger offline strong-tie networks have larger online networks, indicating that their F2F networking behavior is indicative of their use of networking Web 2.0 technologies. This finding is in line with research on social capital but extends our understanding of people's use of CMC to network their resources. Social interactions online are not simply scaled-up representations of individuals and ties, and do not implicitly reflect offline behavior [32]. It is important for both information technology developers and researchers to understand how relations offline affect relations online, and how mediated communication may or may not change behavior. SNS represent one of the most widely used networking tools to emerge since the advent of the Internet, and it is an intriguing finding that SNS users online network size is positively related to their STN size. It certainly could have been plausible to expect that people who maintain larger offline networks would not seek larger online ones, as they already have a rich access to resources, but this was not the case.

Research question 2 addresses the amount of time one spends maintaining SNS profiles regarding cultural and gender differences. There were no cultural differences, but significant difference between the genders, as women spent more time maintaining their profile. Prior research on genders as CMC subcultures points to the notion that females tend to be more concerned with affiliation and connection, a potential



explanation for the higher effort they put into SNS profile maintenance.

Hypothesis 3 also addresses gender-based differences by predicting that male SNS users have larger proportions of online friends not met in person than females. This hypothesis was not supported. There may be relatively straightforward explanations for this finding based on the statistics of promiscuous friending. For example, if promiscuous friendships tend to consist of opposite-sex dyads, then statistical gender-based differences in this measure would be minimized. In the future, we hope to control for the gender of others to explore this issue further.

Hypothesis 5, indicating that females share more photos of themselves online than males, was supported. Sharing photos communicates information about the self, and often about the social context of the sharer. Women seem to be taking advantage of new communication technologies like SNSs to communicate in socially-rewarding ways. Men may experience fewer social benefits from image-based communication, and thus may be less likely to make use of such affordances.

Research question 3 asked about the relationship between SNS users' online and traditional network characteristics, and satisfaction. The only predictor of both general satisfaction as well as social satisfaction was the STN size. This is in line with prior social network research that indicates better-connected people are more successful in life, business, and their relationships. What is also interesting is that gender is the strongest predictor of general satisfaction, followed by culture. Females were more satisfied than males, and those who identify with North American (MNA) cultures were more satisfied than those who identify with Asian or Pacific Rim (APR) cultures. Interestingly, SNS network size was not significant which suggests that F2F contacts are more important to satisfaction than ones CMC social contacts. We do not claim here that online social support is not an important and fitting use of this technology, but given a general life context, offline networks are more important than online networks. Regarding satisfaction with social life, gender was the strongest predictor, followed by STN and culture. Females were more satisfied with their social lives than males, MNA respondents were more satisfied than APR ones, and those with larger STN were more satisfied. This finding is consistent for both traditional as well as SNS network sizes.

The current study was exploratory, and as such possesses several limitations that we hope to address in future research. The equivalence of identifying with a national background with having more or less individualistic cultural values, while present in scholarly cultural analyses, represents a coarse

categorization of a nuanced phenomenon. The measurement of culture using the more complex constructs advocated by Triandis [12] may yield more nuanced results. Yet, as presented in the literature section, there are methodological issues with many of the more specific measures of culture as well. Further, the cultural identities of others in the social network should be taken into account: Facebook remains a primarily North American network site, in contrast to other platforms such as Orkut and CyWorld. Differing technical structures among such platforms may also serve to shape users' behavior. Likewise, additional measures used to gauge SNS behavior will strengthen future research. Ellison et al.'s [4] Facebook Intensity Scale provides an interesting example of an attempt to capture the very broad range of behaviors and attitudes that may indicate intensity of SNS use. Additional individual demographic variables that should be added in future research include income, time since first used SNS, and a wider age range in the sample.

Other individual outcome variables in addition to the satisfaction with life variables measured here may be used to improve our understanding of the implications of different online behaviors, as well. Additionally, a one-item measure was used to measure STN. However, our results are consistent with large pool of over 50 years of sociological research [33].

Cultural differences can manifest in countless ways, and the current research has found that people who identify with different cultural orientations behave and communicate differently. Similarly, research has also established that gender can represent subcultures and thus lead to unique communicative behaviors. The current research investigated the digital echo of culture and the extent to which cultural norms persist in online behavior. Traditional cultural indicators, such as individualistic cultures, as well as gender-as-culture, represented cultural differences. Findings of this research support the notion that people of different cultures do indeed behave in different ways when using Web 2.0 technologies.

## 8. References

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