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A GENERATIONAL COMPARISON OF SOCIAL NETWORKING SITE USE: THE INFLUENCE OF AGE AND SOCIAL IDENTITY

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ABSTRACT

An online survey (N = 256) compared social networking site (SNS) use among younger (millennial: 18-29) and older (baby-boomer: 41-64) subscribers focusing on the influence of collective self-esteem and group identity on motives for SNS use. Younger participants reported higher positive collective self-esteem, social networking site use for peer communication, and social compensation. Regardless of age, participants reporting high collective self-esteem and group identity were more likely to use social networking sites for peer communication and social identity gratifications, while those reporting negative collective self-esteem were more likely to use social networking sites for social compensation. The theoretical implications of the strong relationship between social identity gratifications and social compensation are discussed.

INTRODUCTION

Social networking site (SNS) subscribers form online profiles, which include a variety of personally (and socially) meaningful artifacts such as photographs, music files, and blogs. The undisputed popularity of SNSs (e.g., Facebook, Twitter) has been aptly described as the public display of connection (Donath & boyd, 2004), as fostering a sense of community (see Zhang, 2010) and is widely documented among younger people, especially those in the 18-29 age

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range (labeled millennials; Pew Research Center, 2010a, 2011). Although young people continue to lead in social media use, it is clear that SNSs have also become popular among older age groups (Nielsen, 2009; Pew Research Center, 2010b, 2011). In particular, over the last 2 years SNS use has increased rapidly for the baby-boomer cohort (age 50-64).

In terms of motives for use, earlier investigations of anonymous online experiences as well as SNSs most often focused on their relationship to personal identity (also virtual identities) and virtual communities (e.g., boyd, 2007; Chandler & Roberts-Young; 2000; Turkle, 1997; Zhao, Grasmuck & Martin, 2008). However, many studies have shown that SNSs are primarily about maintaining close contacts forged offline (e.g., Harrison & Thomas, 2009; Joinson, 2008; Livingstone & Brake, 2010; Park, Kee, & Valenzuela, 2009; Pembek, Yermolayeva, & Calvert, 2009; Pew Research, 2011; Raacke & Bonds-Raacke, 2008; Subrahmanyam, Reich, Waechter, & Espinoza, 2008). That said, some research highlights the importance of online communication as a form of social compensation whereby such interactions replace or supplement offline interpersonal relations (e.g., Kraut, Kiesler, Boneva, Cummings, Helgeson, & Crawford, 2002; Peter, Valkenburg, & Schouten, 2005, 2006). However, while the interpersonal aspects of SNS use are clearly important (and well documented) these coexist with social identity and intra/intergroup issues. For example, in a content analysis of Facebook profiles, Zhao et al. (2008) found that "Facebook users 'show rather than tell' and stress group and consumer identities over personally narrated ones" (p. 1816).

This suggests that, in part, SNSs provide people opportunities to gratify the need to socially identify with others who look or think like they do, who share similar tastes and interests, and who often comprise their closest group of friends/peers (Paul & Brier, 2001; Pembek et al., 2009; Rademacher & Nelson, 2008; Zhao et al., 2008). This is known as media social identity gratification (SIG) (Harwood, 1997). But little existing research has examined SNSs with regard to social identity (the sense of importance attached to group belonging) as a motivator for SNS use (although, see Kwon & Wen, 2010). Therefore, with regard to SNS use in two age cohorts (millennials and baby-boomers), the present study tests a model where social identity is antecedent to peer group communication, social identity gratifications, and social compensation. Before explicating these concepts in greater detail, it is helpful to overview recent findings, which speak to SNS use among younger and older subscribers.

SNS Use and Motives for Use

Younger Age Groups

According to the Pew Research Center (2010a), millennials "treat their multitasking hand-held gadgets almost like a body part" (p. 1). Millennials compared to baby-boomers are more likely to own social networking profiles, to connect

to the Internet wirelessly, and to post personal video online. Millennials far outpace older Americans in the use of SNSs. Also, SNSs are particularly popular with young women. In an update on SNS use, the Pew Research Center (2011) reported that 69% of online women use SNSs, compared with 60% of online men. Women are also more active SNS users, 48% of female Internet users use SNSs daily, compared with 38% of males.

According to academic research findings, SNSs are principally used to maintain contact with offline peer groups. Subrahmanyam et al. (2008) investigated online and offline social networks among American undergraduates. The students used the Internet and especially SNSs to connect with friends and family offline networks but also SNSs allowed subscribers to selectively interact with people from their offline world. Stern and Taylor (2007) found four main reasons for use among undergraduate Facebook subscribers: to show the world who they are; to keep in touch with old friends; sometimes to meet new ones; and to check on romantic relationships. Ellison, Steinfield, and Lampe (2007) examined the formation of social capital via Facebook. Although similar to other research findings, the results hinted at a social compensation motive in that Facebook use was related to psychological well being, suggesting that it may offer benefits for users experiencing low self-esteem. Aspects of connection and identity are reflected in the features used by young SNS subscribers. For example, Pembek et al. (2009) found that undergraduate participants reported that Facebook posts detailing favorite music and movies as well as photos were important in conveying identity.

Older Age Groups

A recent Pew Research Center study investigating older adults and social media (Pew Research, 2010b) reports that SNS use among users aged 50 and over has doubled since 2009 and that half of Internet users between 50 and 64 use SNSs. While recognizing that young adults continue as the heaviest SNS users "their growth paled in comparison with the gains made by older users" (Pew Research, 2010b, p. 2). SNSs provide older adults the opportunity to reconnect with people from their past and also to bridge gaps between generations. Rainie (2010) estimated that between 2000 and 2010 there was a 34% increase in Internet use among baby-boomers (46-64 years). Additionally, in a study of the global footprint of social networking, Nielsen (2009) reported that SNSs have become mainstream over time, and that the audience is broader and older—largely due to Facebook's success.

There is a dearth of scholarly research examining SNS use among older cohorts; however, Hogeoom, McDermott, Perrin, Osman, and Bell-Ellison (2010) investigated associations between Internet use and social networks in a large sample of adults over 50 years of age. Frequency of contact with friends, contact with family, and attendance at organizational meetings were found to have a

significant positive association with Internet use. The findings offered support for the view that Internet use strengthens social networks for adults over 50. However, a study of differences in MySpace pages among older people (over 60 years of age) compared to teenagers (between 13 and 19 years of age), showed a social capital divide (Pfeil, Arjan, & Zaphiris, 2009). Teenagers had larger networks of friends compared to older MySpace users and the majority of teenage users' friends were in their own age range, while older people's friend networks included a more diverse age distribution. Teenagers tended to make more use of different media (e.g., video, music) on MySpace and use more self-references and negative emotions when describing themselves compared to older people.

In sum, prior research highlights similarities and differences in the motives and forms of SNS use among millennials and baby-boomers but clearly the main focus is connection. Indeed, the Facebook login page asserts: "Facebook helps you connect and share with the people in your life." The current study then examined social identity as a motivator for SNS use in the two age groups. Additionally the study sought to determine the relationship between social identity, SIG, and social compensation in an age-comparative context. Each of these theoretical concepts is discussed next.

Social Identity, Social Identity Gratifications, and Social Compensation

Social Identity

Social identity theory (SIT) suggests that self-concept is partly obtained from group memberships (ingroups). In fact, people have multiple social identities because they are members of multiple groups (Brewer, 2000; Tajfel, 1978). Tajfel and Turner (1986) defined a group "as a collection of individuals who perceive themselves to be members of the same social category, (and) share some emotional involvement in this common definition of themselves . . ." (p. 15). People evaluate their ingroup positively via social comparisons with outgroups (Tajfel, 1978) and construct group norms during their interactions with ingroup members (Turner, 1982). Social identity underlies the concept of collective self-esteem (Luhtanen & Crocker, 1992), which relates to the influence that ingroup belonging exerts on self-concept. Typically, people seek to boost the positive aspects of collective self-esteem (Tajfel & Turner, 1986). But collective self-esteem can also be *negative* because it is the outcome of how a person evaluates his or her own group and perceptions about how others evaluate that group (Luhtanen & Crocker, 1992; Tajfel & Turner, 1986). Individuals sensing that their ingroup is disliked may seek to distance themselves from it. Intergroup theorists describe this as social mobility (Tajfel & Turner, 1986).

SIT is typically applied to large-scale social categories such as race but applies equally well to small groups where identity is acquired rather than ascribed (Hogg, Abrams, Otten, & Hinkle, 2004). Early studies (involving children and

adults) where in- and out-group contexts were created to trigger ingroup discrimination demonstrated this (Tajfel & Turner, 1986). This is also true of the minimal group designs employed by intergroup contact theorists (Kenworthy, Turner, Hewstone, & Voci, 2005). As well, computer mediated communication scholars have investigated the influences of social identity on small group behaviors in virtual settings (e.g., Lee, 2006, 2007). Research driven by social identity deindividuation effects (Spears & Lea, 1992) shows that people use group memberships to guide their behaviors when personal cues are unavailable.

Group belonging and social identity are important attributes of *all* age groups (Adams, 1986; Tajfel & Turner, 1986; Thurlow, 2005; Williams & Nussbaum, 2001) but group belonging is particularly significant for young people (Williams & Turlow, 2005). A large body of research has examined the relationship between social identity and peer group belonging among younger age groups. Studies conducted by Palmonari and colleagues studying peer group membership, group belonging, and well being (e.g., Palmonari, Kirchler, & Pombeni, 1991; Palmonari, Pombeni, & Kirchler, 1989, 1990) indicated that, regardless of peer group type, highly identified participants used peer groups to fill a vacuum in their adolescent years. And, in a program of research investigating social identity and adolescence, Tarrant (2002) highlighted the importance of peer group belonging to self esteem, as well as to positive experiences of developmental tasks (e.g., Tarrant, Mackenzie, & Hewitt, 2006). Among college students there is an additional challenge in maintaining existing peer group belonging (Paul & Brier, 2001) and transitioning to new friendship groups (Paul & Brier, 2001; Rademacher & Nelson, 2008). Relatedly, Weisz and Wood (2005) showed that students who perceived new friends as supporting their important social identities were likely to consider those individuals to be best friends 4 years later.

Research about older age groups and lifespan communication also underscores the importance of social identity (Harwood, 2007; Lin, Hummert, & Harwood, 2004; Williams & Nussbaum, 2001). Harwood (2004) examined relational, role, and social identity themes on grandparents' websites and uncovered representations of grandparent identity, which held personal as well as political (activist) importance for the contributors. There is evidence though that social identity may not be as intense or operate in quite the same way as for young people (Chasteen, 2005; Kang & Chasteen, 2009). Therefore, because of the salience of social identity and group belonging among young people especially, it was expected that younger participants would report higher levels of social identity and collective self-esteem than would older participants.

H1: There will be a negative relationship between age and peer group identity and positive collective self-esteem.

In SNSs, personal *and* social identity cues are evidenced. Thus, SNS users post material that relates to their individual preferences but also include content that acts as a group marker. Visitors communicate with a profile owner on a purely

interpersonal level and/or on an intergroup level (ingroup or outgroup member). Prior research indicates that ingroup identification and belonging is facilitated by SNS use. Walz (2009) conducted a survey involving undergraduate students who reported their participation in face-to-face interactions with friends, Internet use, SNS use (mostly Facebook), and their sense of belonging. Results revealed that students' sense of belonging was positively correlated with the number of hours per day using Facebook and with the total number of Facebook friends. Relatedly, Madge, Meek, Wellens, and Hooley (2009) investigated the effect of pre-registration engagement with a university Facebook network on students' post-registration social networks. Students reported that they specifically joined Facebook pre-registration as a means of making friends at university, as well as keeping in touch with friends and family at home. Once at university, students reported using Facebook to reinforce friendships and settle into university life.

Individuals who identify strongly with their ingroup and feel high levels of positive collective self-esteem may be especially drawn to SNSs to reinforce such attitudes. This mirrors the social enhancement hypothesis, which suggests that people who are already comfortable in social situations use SNS to seek opportunities to communicate with valued peers as a way to supplement their existing offline interactions (Gross, Juvonen, & Gable, 2002; Kraut et al., 2002; Peter et al., 2005). Hence, in the present study it was expected that strong social identity and positive collective self-esteem would relate to stable and valued peer group relations especially for the younger cohort.

H2a: Younger participants compared to older participants who report high positive collective self-esteem will be more likely to use SNSs to communicate with their valued peer group members.

H2b: Younger participants compared to older participants who report strong group identity will be more likely to use SNSs to communicate with their valued peer group members.

Social Identity Gratifications

Research shows that people choose and avoid media content based on group belonging (e.g., Abrams & Giles, 2007). Examining media use, Harwood (1997, 1999a, 1999b) theorized that people bolster social identity via mainstream media content that features people who look and behave as they do and who belong to the same social group. This is the process of media social identity gratifications (SIG). Harwood's program of research indicated that people with high age identity typically choose programming that contains characters of their own age group. The interactive nature of SNS use in particular makes SIG much more significant because people may use such media "to negotiate their identities, social positions, and emotional lives" (Papacharissi & Rubin,

2000, p. 176). Therefore, individuals of all ages espousing high social identity and positive collective self-esteem might seek to bolster these further via SNS use.

H3a: Participants reporting high positive collective self-esteem will be more likely to use SNSs for SIG.

H3b: Participants reporting strong group identity will be more likely to use SNSs for SIG.

That said, limited research (Barker, 2008, 2009) has also shown that, among young people, negative collective self-esteem can be associated with seeking identification with others via SNSs. This being so, the following research question was posed:

RQ1: Is negative collective self-esteem related to SIG for younger and older people?

Social Compensation

Socially anxious people can use social media to gain more positive friendship experiences compared to those experienced offline (Cambell, Cumming, & Hughes, 2006; Gross et al., 2002; Kraut et al., 2002; Peter et al., 2005, 2006). Social interactions occurring on SNSs are predominately conducted via on-screen text. Communicating in this way may feel more comfortable for people uneasy in face-to-face situations (Desjarlais & Willoughby, 2010). Zywica and Danowski (2008) found support for both social enhancement and social compensation via Facebook. The authors concluded that low self-esteem users try to enhance their self-image via Facebook and feel more comfortable expressing themselves online rather than offline. Sheldon (2008) provided further evidence for this view in a survey to examine how unwillingness-to-communicate face-to-face influences gratifications sought and gratifications obtained from Facebook use. Results revealed that participants who reported anxiety in face-to-face communication used Facebook to pass time and alleviate loneliness more than others. In terms of gender differences, Desjarlais and Willoughby (2010) investigated whether the positive association between online communication with friends and reports about friendship quality was stronger for adolescents with low levels of social anxiety or high levels of social anxiety. They found support for both the social enhancement and social compensation hypotheses among girls, but for boys the relationship was stronger only for the socially anxious.

Although the research investigating social compensation has mostly been associated with decrements in personal self-esteem and interpersonal communication, it could be viewed as a form of social mobility strategy. Individuals experiencing negative *collective* self-esteem are unhappy about the peer groups with which they associate or are associated with. Social media provide the opportunity to reinvent identity or to find the company of others—both social mobility

strategies. Research investigating social media use and social compensation has relied solely upon adolescent or undergraduate samples and to date there appears to have been no comparative research conducted among older age groups. However, social media research shows that baby-boomers overwhelmingly use SNSs to connect to existing family and friends as well as to *reconnect* with former friends (Pew Research, 2010b); therefore, in the current study it was expected that it would be primarily among the younger age group that individuals looking for distance from their peer group seek social compensation via SNSs.

H4a: Younger participants compared to older participants who report high negative collective self-esteem will seek social compensation via SNS use.

H4b: Younger participants compared to older participants who report low group identity will seek social compensation via SNS use.

METHOD

Participants

To generate a snowball sample and earn additional extra credit points, undergraduate participants recruited from a media studies class at a South Western university were also asked to solicit participation from older adults (either parents or adults of a similar age to their parents). Participants were directed to a link containing a brief summary of the study goals as well as Institutional Review Board informed consent information and the Survey Monkey URL. The initial sample consisted of a total of 299 undergraduates and older adults; however 32 cases were deleted because of a large proportion of non-responses or because the participants had not reported their age ($n = 267$; range = 19-78 years; $M = 33$; $SD = 14.90$). To assess mean differences between the two age groups, the participants were categorized as younger (Millennials: 19-29 years; $n = 160$; Female = 128) or older (Baby-boomers: 41-65 years; $n = 96$; Female = 76). Persons whose age precluded them from either of these categories were not included in the analysis ($n = 11$). The final sample ($N = 256$) consisted of 204 females, reported age $M = 32$ years; $SD = 14.57$; Caucasian = 65%, Latino = 13%, Asian = 8%, African American = 4%, Pacific Islander = 4%, and the remaining 6% reported multiple ethnicities or as international students. Fully 90% of the participants reported Facebook as their primary SNS. Because of the overwhelming majority of females in the sample, preliminary tests for mean differences between age groups as well as Pearson correlations were conducted controlling for gender. Gender was not included in the test of the hypothesized model because of the small number of males in the sample.

Questionnaire and Measures

The original version of the questionnaire used in this study was employed in three prior studies involving American undergraduate students. The reliabilities for the measures in these earlier studies were good (ranging from .80 to .93) and produced similar outcomes on all three occasions (Barker, 2008, 2009; Barker & Ota, 2011). Within the questionnaire there were several scales measuring variables of interest. These included: motives for SNS use; a group identification measure; positive and negative collective self-esteem scales; as well as formatting, frequency, and duration of use items. With the exception of the frequency questions, the participants' scores were the overall means of the items comprising the scales. All scale items were closed-ended and participants responded on a 7-point range (e.g., 1 = very strongly disagree; 7 = very strongly agree). The benchmark for statistical significance in this study was $p < .05$.

Motives for SNS Use

Based on prior research (Barker, 2008, 2009; Barker & Ota, 2011; Harwood, 1999a, 1999b; Papacharissi & Rubin, 2000; Rubin, 1979, 1984), existing measures of media gratifications were reviewed and a combination of interpersonal, socio-psychological, media, and CMC motives were conceived. These included SIG, social compensation, peer communication, passing time, and entertainment. For example, on a 7-point scale participants were asked how much they agree that they go to their SNS to pass away the time, or because it is convenient, to swap news with close friends, to communicate with close friends. Seven amended items from the age identity gratifications scale (Harwood, 1999a) were used to measure motives for using SNSs for social identity gratifications. The original scale was intended to measure identification with characters (in terms of age) within television content (e.g., "I watch television because I enjoy watching young people like me"; "I watch television to see people who I identify with"). Therefore, in this study participants were asked how much they agree that they use their SNSs to interact with people who are like them or to identify with people like them. See Table 1 for the items included in the final analysis and associated Cronbach alphas.

Group Identification and Collective Self-Esteem

Participants completed the inclusion-of-the-ingroup-in-the-self measure (Tropp & Wright, 2001). They were asked to select the pair of circles that best represents their relationship with their closest group of friends. More overlap between circles means that peer group identity is more central to the self. This measure has been used in a variety of research contexts (e.g., Abrams & Giles, 2007) and results have indicated that it is a valid, reliable measure for assessing group identity and it correlates with other group identification measures.

Table 1. Scale Items with Cronbach Alphas

Social Identity Gratifications	Younger = .93	Older = .93
To meet new people like me		
To learn about people like me		
To find out about people like me		
To meet people like me		
To interact with people with similar backgrounds		
To interact with people like me		
To identify with people there		
To see what happens to people like me		
It teaches me things		
It shows how other people deal with problems		
Social Compensation	Younger = .89	Older = .85
To forget about things		
It makes me feel less lonely		
To get away from other people		
It calms me down when I'm angry		
Because there's nobody to talk to		
So I won't be alone		
To learn what could happen to me		
Pass Time	Younger = .83	Older = .84
It gives me something to do		
Nothing better to do		
To pass the time		
Because it's a habit		
To get away from things I'm doing for a while		
Entertain	Younger = .84	Older = .85
Because it's pleasant		
Because it's enjoyable		
Because it's interesting		
I just like to		
Peer Communication	Younger = .80	Older = .83
To stay in touch with close friends		
To communicate with close friends		
To swap news with close friends		
Asked to consider their "closest group of friends"		
Positive Collective Self-Esteem	Younger = .88	Older = .90
I am glad to be a member of my group		
I feel good about the group I belong to		
Others respect my group		
Others consider my group good		
I participate in activities with my group		
Negative Collective Self-Esteem	Younger = .84	Older = .75
I often feel I am a useless member of my group		
I often regret that I am a member of my group		
I often feel my group is not worthwhile		
I feel I don't have much to offer my group		

In addition, 12 amended items from the collective self-esteem scale (Crocker, 2007; Luhtanen & Crocker, 1992) were employed. The 16 original items referred to the value placed by respondents upon being members of a group—how much affinity with their group participants feel and also how distant, uninvolved they feel (e.g., "I often regret that I belong to my group"; "Overall, my group is considered good by others"). The 12 amended items used in the current study had been successfully employed in three prior studies (reliabilities respectively: positive collective self-esteem .91, .91, .88; negative collective self-esteem .84, .83, .87). Prior research indicated that, even when reversed, the negative items did not load on the same factor as the positive items. Hence, it was determined that these were two distinct dimensions. Agreement with six items indicates a high level of collective self-esteem (e.g., "In general, I'm glad to be a member of my group")—*positive collective self-esteem*. Agreement with the other six items indicates disconnection from group and collective self-esteem (e.g., "I often regret that I belong to my group")—*negative collective self-esteem*.

Frequency of Use and Nature of Content

First, general information questions were included concerning server identification, length of membership, restricted or unrestricted access, and estimated number of regular visitors. Participants were also asked to provide the number of visits they make to their SNSs (and to their friends' SNSs) on an average weekday as well as on an average Saturday or Sunday (between 1 to 5 with an option to type in other number estimates). Next they were asked to provide estimates of the length of time spent on their SNSs on an average weekday and on an average Saturday or Sunday (between 1 to 12 hours with an option to type in other lengths of time). The responses to these frequency and duration questions were summed to form a global measure of SNS usage (Cronbach alpha: Younger = .65, Older = .79; see Table 1 for other scale reliabilities). As well, participants were asked to estimate how often they change the content and/or features (options 1 to 7, where 1 = never, 7 = very often). Also, they were asked about the kinds of features included on their page (options: yes/no; e.g., special backgrounds or wallpapers, photos, video, music, animation, movie clips, diary, blogs) and types of color schemes they like to use. Finally, participants were asked if they provide personal information: hobbies, likes/dislikes, people they admire, name, e-mail and address, or telephone number.

Data Analysis

Scale items were coded positively; a high score indicated higher social compensation or SIG, higher group identification, use of SNSs to communicate with peer group, etc. Each scale was tested for internal consistency using Cronbach alpha and composite reliability was also computed. Items not contributing to

reliability were deleted. Discriminant validity was assessed using the square root of the average variance extracted. All scales posted acceptable or good reliability (see Table 1). The items retained and Cronbach alphas are shown in Table 1. Additionally, prior to testing structural equation models, measurement models were tested for both age groups.

To determine if the younger and older participants in this convenience sample mirror current SNS usage among these age groups in North America, Pearson correlation coefficients and chi-square tests were computed to assess if younger participants reported more frequent SNS use, more SNS friends, and greater use of applications and features than did older participants. Fisher's transformation was used to calculate *z* scores to assess statistical differences in correlations between sub-samples. For the chi-square tests, the sample was divided into two age groups (18-29 years, $n = 160$; 41-65 years, $n = 96$). For hypothesis 1 (relationship between age and collective self-esteem and group identity), MANOVA was used to test between-age-group differences on valence of collective self-esteem, group identity, and SNS use motives. Structural equation modeling was used to test hypotheses 2 through 4 (influence of group identity/collective self-esteem on peer communication, SIG, and social compensation) and answer the research question (negative collective self-esteem and SIG). The hypothesized model is shown in Figure 1.

RESULTS

There was a statistically significant negative relationship between age and frequency of use ($r = –.52$, $p < .0001$). In addition, age was related to number of friends ($r = –.61$, $p < .0001$), level of importance attributed to number of friends ($r = –.18$, $p < .001$), and frequency of changing profile content ($r = –.28$, $p < .0001$). The chi-square tests revealed that (among many differences) members of the younger age group more than the older age group were likely to post pictures of themselves ($\chi^2 = 5.75$, $df = 1$; $p < .05$), pictures of friends ($\chi^2 = 35.01$, $df = 1$; $p < .0001$), pictures of themselves with friends ($\chi^2 = 27.12$, $df = 1$; $p < .0001$), video of self ($\chi^2 = 29.77$, $df = 1$; $p < .0001$), and friends ($\chi^2 = 31.68$, $df = 1$; $p < .0001$), "what I'm doing now" ($\chi^2 = 43.08$, $df = 1$; $p < .0001$), and choice of music ($\chi^2 = 22.74$, $df = 1$; $p < .0001$). These findings are in line with current knowledge about younger vs. older SNS use in North America.

Hypothesis 1 (younger participants and collective self-esteem/group identity) was confirmed with younger participants posting higher means for positive collective self-esteem and inclusion-of-ingroup-in-self. Table 2 summarizes the means, standard deviations (younger and older age groups), and the results of the *F*-tests with effect size for all the variables of interest. In addition to differences in positive collective self-esteem and inclusion-of-ingroup-in-self, the younger age group posted higher means for peer group communication, social compensation, entertainment, and passing time. There were no statistically

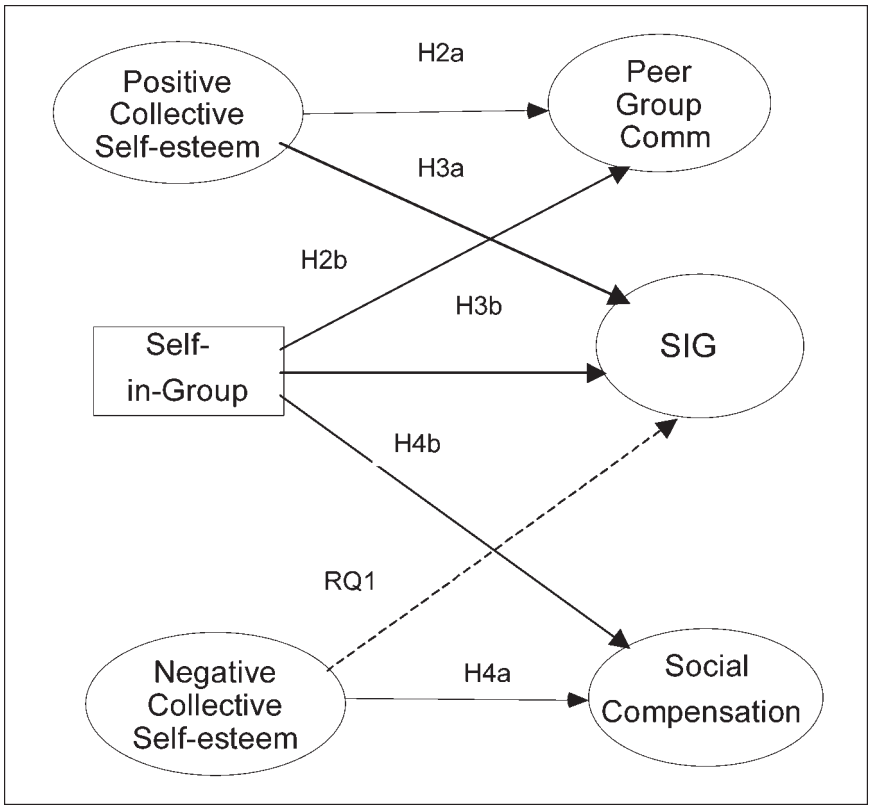

Figure 1. Hypothesized model: Influence of collective self-esteem and group identity on SNS use motivations.

significant differences between the age groups for SIG and for negative collective self-esteem. In fact, compared to their scores on positive collective-self-esteem, both age groups posted means below the mid-point on this latter scale. That said, when gender was introduced as a covariate (a control variable), the results indicated that, among males, in addition to negative collective self-esteem and SIG, there were no age differences in the means for social compensation. It should be underscored that the multivariate comparison on the scales involved small numbers of male participants (n = 32 for the younger age group and n = 20 for the older age group). Therefore, there is a clear possibility of a Type 2 error for these specific tests.

Table 3 summarizes the bivariate correlations for the younger and older age groups between collective self-esteem and inclusion-of-ingroup-in-self and SNS use motivations plus SNS frequency of use (statistically different scores for the

Table 2. Descriptive Statistics for Scales

Scale	Mean (*SD*) Younger	Older	F(η^2)
Peer Group Contact	5.77 (.93)	5.15 (1.43)	15.40** (.067)
Pass Time	5.16 (1.10)	3.45 (1.51)	91.29** (.30)
Entertainment	5.23 (.83)	4.72 (1.20)	13.56** (.060)
Social Identity Gratifications	3.54 (1.30)	3.45 (1.34)	.18 (.001)
Social Compensation	2.93 (1.21)	2.47 (1.14)	7.61** (.034)
Positive Collective Self-Esteem	5.33 (.97)	4.71 (1.12)	18.38** (.079)
Negative Collective Self-Esteem	2.35 (1.12)	2.16 (.93)	1.59 (.007)
Ingroup-in-self (1 Item)	4.56 (1.41)	3.69 (1.81)	15.41** (.067)
SNS Frequency of Use	16.72 (6.45)	10.09 (5.48)	59.47** (.22)

*$p < .05$, **$p < .01$.

sub-groups are also shown). All of the relationships shown in Table 3 held when controlling for gender. However, it was noted that gender (male) was related to negative collective self-esteem ($r = –.20$, $p < .001$) and to social compensation ($r = –.13$, $p < .05$).

Table 4 shows discriminant validity for the scales. Discriminant validity is the extent to which a scale is not a mirror image of some other measure. Discriminant validity is demonstrated when the squared root of the average variance extracted (AVE) for each of the scales is higher than the correlations with all the other scales. Table 4 shows that, in the current study, the AVE for each of the scales is greater than the correlations between all the other scales with the exception of social compensation. Social compensation posts a similar AVE to its correlation with SIG in both sub-samples. The implications of this latter outcome are discussed later in the discussion section.

Measurement Models

Two measurement models and then two structural equation models were tested for the younger and older sub-samples. The purpose of the measurement model is to assess the reliability of the variables which act as indicators of the latent factors (scales). Table 5 illustrates that the indicator variables posted relatively high path coefficients from their latent factors for both samples, with the vast majority of loadings between .6 and .9. As well, the composite reliabilities for the scales were calculated. Composite reliability is a measure of the

Table 3. Correlations: SNS Use Motivations, Collective Self-Esteem and Group Identity among Younger/Older Participants

Measures	1	2	3	4	5	6	7	8	9
1. Positive Collective Self-Esteem	—	–.31**	.33**	.04	.31**	.26*	.50**	.59**	.23*
2. Negative Collective Self-Esteem	–.50**	—	–.16	.39**	.26*[a]	.19	–.16	–.31**	–.16
3. Group in Self	.25**	–.10	—	.06	.08	.08	.28**	.35**	.22
4. Social Compensation	–.07	.50**	.05	—	.52**	.67**	.36**	.18	.28**
5. Pass Time	.40**	–.14	.12	.37**	—	.38**	.57**	.27**	.45**
6. Social Identity Gratifications	.18*	.28**	.03	.66**	.36**	—	.45**	.29**	.27*
7. Entertainment	.38**	–.10	.11	.30**	.50**	.46**	—	.67**	.37**
8. Peer Communication	.42**	–.23**	.39**	.15	.44**	.28**	.52**	—	.26**
9. Social Networking Site Use	.03	.07	.23**	.17*	.32*	.25**	.31*	.29**	—

Note: Intercorrelations for the older age group (n = 96) are shown above the diagonal and intercorrelations for the younger age group (n = 160) are shown below the diagonal.

*$p < .05$, **$p < .01$.

[a] $z = -3.11$, $p = .001$.

Table 4. Discriminant Validity for Factors
(**Note**: Diagonal elements represent the square roots of average variance extracted.)

	1	2	3	4	5
1. Positive Collective Self-Esteem	**.82** **.78**	–.31**	.04	.26*	.59**
2. Negative Collective Self-Esteem	–.50**	**.68** **.75**	.39**	.19	–.31**
3. Social Compensation	–.07	.50**	**.69** **.69**	.67**	.18
4. Social Identity Gratifications	.18*	.28**	.66**	**.74** **.74**	.29**
5. Peer Communication	.42**	–.23**	.15	.28**	**.80** **.77**

Note: Intercorrelations for the older age group (n = 96) are shown above the diagonal and intercorrelations for the younger age group (n = 160) are shown below the diagonal.
*$p < .05$, **$p < .01$.

overall reliability of a collection of heterogeneous but similar items. It is calculated by taking the (sum of standardized loadings)^2/[(sum of standardized loadings)^2 + the sum of the variance due to random measurement error for each loading]. All composite reliabilities were good. Additionally these models showed moderate to good fit to the data (Younger: $\chi^2/df = 1.60$, RMSEA = .061; CFI = .98, TLI = .98, NFI = .95, RFI = .95, IFI = .98; Older: $\chi^2/df = 1.38$, RMSEA = .063; CFI = .98, TLI = .97, NFI = .93, RFI = .91, IFI = .98). The loadings, composite reliabilities, means, and standard deviations for the factor items (younger and older) are displayed in Table 5.

Structural Equation Models

The outcome of the tests of the hypothesized model for the younger and older sub-samples is displayed in Figure 2. The model statistics indicated a moderate to good fit to the data for the sub-samples (Younger: $\chi^2/df = 1.62$, RMSEA = .062; CFI = .98, TLI = .98, NFI = .95, RFI = .94, IFI = .98; Older: $\chi^2/df = 1.38$, RMSEA = .063; CFI = .98, TLI = .97, NFI = .93, RFI = .91, IFI = .98). However, a nested models comparison indicated that there was no statistical difference

Table 5. Measurement Models: Latent Factor Item Loadings for Younger and Older Groups

	Loading		Mean		*SD*	
Factor	Y	O	Y	O	Y	O
Peer Group Contact Composite Reliability = Y .82 O .84						
To stay in touch with close friends	.83	.96	5.89	5.26	1.60	1.20
To communicate with close friends	.83	.78	5.82	5.20	1.09	1.53
To swap news with close friends	.59	.62	5.53	4.98	1.17	1.75
SIG Composite Reliability = Y .93 O .92						
Find out about people like me	.84	.86	3.56	3.42	1.68	1.78
Learn about people like me	.86	.84	3.54	3.53	1.61	1.71
Identify with people there	.80	.77	3.67	3.42	1.56	1.68
Meet new people like me	.75	.75	3.08	3.22	1.70	1.70
Shows how other people deal with problems	.73	.74	3.14	2.93	1.57	1.58
Meet people like me	.63	.67	3.08	2.85	1.58	1.65
See what happens to people like me	.75	.70	3.77	3.48	1.68	1.73
Teaches me things	.69	.68	3.57	3.66	1.62	1.73
Interact with people like me	.78	.66	3.82	3.64	1.70	1.76
Interact with people with similar backgrounds	.68	.64	3.62	3.86	1.65	1.78
Social Compensation Composite Reliability = Y .86 O .86						
To learn what could happen to me	.83	.59	2.74	2.61	1.40	1.58
To get away from other people	.73	.73	2.78	2.20	1.50	1.41
It calms me down when I'm angry	.64	.61	3.37	2.87	1.54	1.55
Because there's nobody to talk to	.65	.75	2.59	2.61	1.51	1.41
So I won't be alone	.59	.71	3.18	2.66	1.61	1.67
It makes me feel less lonely	.68	.82	2.94	2.58	1.56	1.61
To forget about things	.66	.56	2.82	2.13	1.65	1.32
Positive Collective Self-Esteem Composite Reliability = Y .88 O .91						
I feel good about the group I belong to	.81	.91	5.26	5.26	1.20	1.33
I am glad to be a member of my group	.83	.90	5.54	5.15	1.20	1.39
Others respect my group	.79	.86	5.14	4.89	1.24	1.24
Others consider my group good	.61	.76	5.25	4.92	1.25	1.41
I participate in activities with my group	.73	.59	5.08	4.22	1.38	1.61
Negative Collective Self-Esteem Composite Reliability = Y .83 O .77						
I often regret that I am a member of my group	.75	.76	2.16	1.90	1.25	1.06
I often feel my group is not worthwhile	.90	.62	2.31	2.21	1.26	1.24
I feel I don't have much to offer my group	.55	.63	2.71	2.54	1.60	1.37
I often feel I am a useless member of my group	.75	.64	2.26	2.01	1.33	1.33

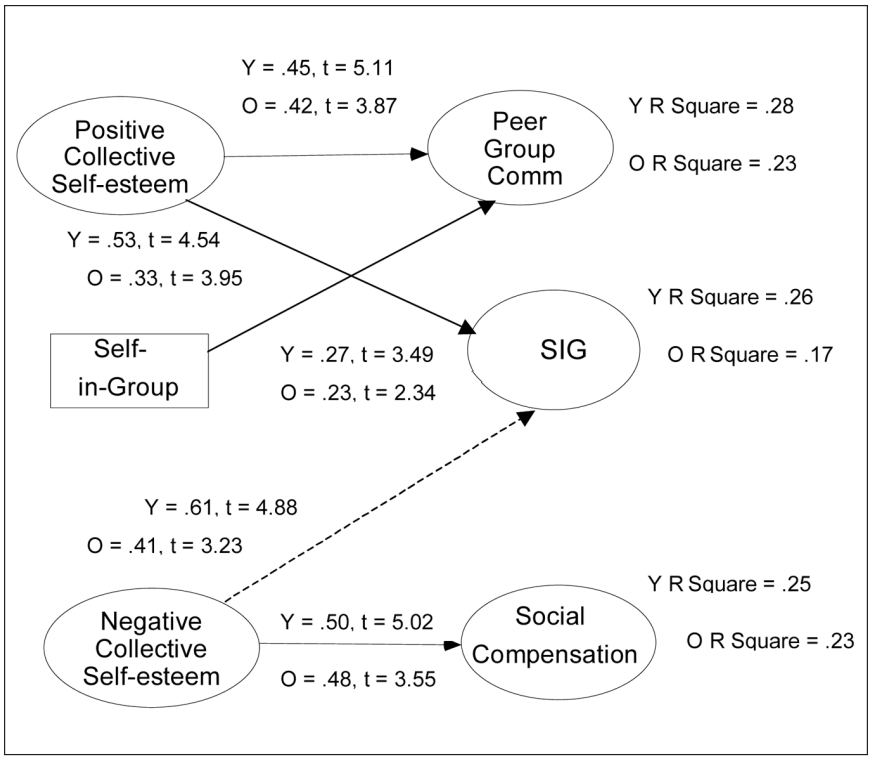

Figure 2. Final model: Regression weights for younger and older participants.

between the two models (p = .95; χ^2/df = 1.75, RMSEA = .038; CFI = .98, TLI = .98, NFI = .95, RFI = .94, IFI = .98). Therefore, the relationships between the latent factors are described for the sample as a whole.

Although the younger participants did post higher scores on collective self-esteem and inclusion-of-ingroup-in-self, all participants reporting high positive collective self-esteem (Hypothesis 2a) and strong group identity (Hypothesis 2b) were more likely to report SNS use to communicate with valued peer group members. Hypothesis 3a posited that participants reporting high negative collective self-esteem would seek social compensation via SNSs. There was no statistical difference between the age groups for negative collective self-esteem but negative collective self-esteem was a strong predictor of social compensation; however, hypothesis 3b was not supported. There was no relationship between inclusion-of-ingroup-in-self and social compensation. Hypothesis 4a (positive

relationship between positive collective self-esteem and SIG) was confirmed. The results showed a moderate to strong positive relationship between positive collective self-esteem and SIG. Hypothesis 4b was not supported. The relationship between inclusion-of-ingroup-in-self and SIG was non-significant.

In answer to the research question, there was a strong relationship between negative collective self-esteem and SIG for both age groups, but post hoc analysis indicated that this relationship fell out when a path between social compensation and SIG was added to the models. In this instance, there was a very strong relationship between social compensation and SIG (younger participants .88; older participants .76).

DISCUSSION

This study increases understanding about age and SNS use in two ways. First, it highlights that there are more similarities than differences in the ways that millennials and baby-boomers use SNSs. Second, it emphasizes that social identity and group belonging transfer to the SNS context and that SNSs are important in reinforcing these two aspects of self. Although the younger cohort posted mostly higher means on all the variables of interest, overall the findings suggest that SNSs provide a generally positive environment for both younger and older profile owners. Research has documented the importance of social identity for self-esteem and psychological well being, especially among adolescents and young adults. In that regard, the findings confirm the importance of collective self-esteem as a precursor to SNS use for communication with valued peer group members. While the findings did corroborate a social capital divide between younger and older SNS users, they also show that group identity and social identity gratification are important to both age groups. As expected, younger compared to older participants reported higher positive collective self-esteem and affinity with their closest peer group. The findings confirmed the relationship between positive collective self-esteem and group identity and motivation to communicate with peer group members and to seek social compensation. Interestingly, both positive and negative collective self-esteem predicted SNS use for SIG. This is discussed later with regard to the relationship between SIG and social compensation for these participants.

All participants, regardless of age, who reported positive identity were interested in communicating with valued peers via SNS. That the younger cohort was more likely to report collective self-esteem and, to a lesser extent, group identity by no means suggests that social identity is not an important catalyst for SNS use among older cohorts. For example, Harwood (2004) uncovered themes of affiliation and social identity (grandparent role) in grandparents' personal websites plus Hogeoom et al. (2010) saw a convincing relationship between various types of Internet use and older adults' connections to their offline social networks. Therefore, the results of the present study may simply reflect that,

for young adults, the development of closeness with peers is in part a developmental task (Pulakos, 2001) and that SNSs provide yet another important context for that process. Emerging adults' lives are likely much more centered on such interactions than is the case for older adults who tend to be less promiscuous in terms of number of SNS friends but exhibit greater diversity among SNS friends (Pfeil et al., 2009). Both age groups posted low levels of negative collective self-esteem and comparable levels SIG, indicating that both groups generally felt positive about their peer groups and were likely similarly engaged in identification with them via SNS.

Of particular interest in this study is that negative collective self-esteem was strongly related to both SNS use for SIG *and* to seek social compensation. Among those who felt disenchanted with their offline peers, evidence of a desire to compensate by seeking sources of connection/comfort via SNS was expected as a form of social mobility. However, at first it is somewhat counterintuitive that these dissatisfied participants would also wish to identify with similar others via SNS. An explanation for this may be found in the very strong statistical relationship between SIG and social compensation for both groups (see Table 5). In terms of face validity, the items comprising these two concepts were distinct from one another. However, the findings suggest that they may be dimensions of a larger construct. Whereas SIG is about *identification* with others via SNS, social compensation is about seeking *connection* with others via SNS. In other words, SIG embodies a desire for social belonging while social compensation may be more akin to seeking interpersonal affinity. Regardless, it seems logical that these goals would be strongly inter-related as in social and personal identity.

Conclusions and Directions for Future Research

SNSs provide an opportunity for intergenerational and intergroup contact, which is perhaps less "risky" than offline communication and potentially very satisfying. For example, describing his mother's Facebook profile in an e-mail communication, a male participant commented: "Wow, I got to know my mom a little better! That was cool . . . I attached a screen shot of her picture page and be sure to read her quote on the left of her profile page. =)." Of course, many young people may not be favorably disposed to providing SNS access to their parents or other older adults but that is interesting in itself in terms of understanding motives for SNS use. The connection between SIG and social compensation raises new questions about how social identification through social media potentially feeds into group belonging and also interpersonal relationships both on- and offline. What is the relationship between interpersonal communication, intra- and intergroup communication in this context? How does the potential for intergroup contact via SNSs implicate social identity, intergroup conflict or interpersonal liking for outgroup members? These questions are of interest in the context of SNS "lurking," which is basically a surveillance or browsing activity

on SNSs. People can simply "keep up" with their valued ingroup members' activities, thoughts, and feelings, plus they can also find a window into the lives of outgroup members. This is clearly a subject for further research.

Limitations

Although the reports of SNS usage in this sample reflected current estimates in the larger population, this study utilized a convenience sample of college students and older adults; therefore, the results cannot be regarded as representative of the age cohorts in question. Also, the sample contained a very clear gender imbalance. This is problematic because prior research has indicated that males vs. females use SNS in differing ways. Very few gender differences emerged in the study analyses but in the older sub-sample, especially, there were very few males to offer a comparison. As well, the sample did not reflect the racial composition current in the state where the data were gathered or in the United States as a whole. As racial differences do show in social media use (Grasmuck, Martin, & Zhao, 2009; Pew Research, 2010b), this is a threat to the validity of the study. Future research should revisit the issues highlighted here using a larger sample and one that is more age, gender, and race representative.

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