Who interacts on the Web?: The intersection of users' personality and social media use

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ABSTRACT

In the increasingly user-generated Web, users' personality traits may be crucial factors leading them to engage in this participatory media. The literature suggests factors such as extraversion, emotional stability and openness to experience are related to uses of social applications on the Internet. Using a national sample of US adults, this study investigated the relationship between these three dimensions of the Big-Five model and social media use (defined as use of social networking sites and instant messages). It also examined whether gender and age played a role in that dynamic. Results revealed that while extraversion and openness to experiences were positively related to social media use, emotional stability was a negative predictor, controlling for socio-demographics and life satisfaction. These findings differed by gender and age. While extraverted men and women were both likely to be more frequent users of social media tools, only the men with greater degrees of emotional instability were more regular users. The relationship between extraversion and social media use was particularly important among the young adult cohort. Conversely, being open to new experiences emerged as an important personality predictor of social media use for the more mature segment of the sample.

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1. Introduction

The Internet has profoundly changed the human experience. We use the Web to find information, buy and sell products, watch television shows, seek mates, search for entertainment, and participate in political spheres (Gil de Zúñiga, Puig, & Rojas, 2009; Gil de Zúñiga, Veenstra, Vraga, & Shah, in press; Park, Kee, & Valenzuela, 2009). We use it to connect with others – three-quarters of American adults have been online, with even more teens (93%) reporting they do so, and almost all Internet users say one of their primary purposes for going online is for communication (Jones & Fox, 2009). The Internet is part of our everyday lives, and who we are guides how we use it.

People once went online seeking the anonymity it offered (McKenna & Bargh, 2000); they now more often use the Internet to socialize with people they do know and expand their circle of friends (Jones, 2009). Two of the primary tools that enable these connections are social networking sites and instant messages (Ellison, Steinfield, & Lampe, 2007; Jones, 2009; Lenhart, 2009; Raacke & Bonds-Raacke, 2008; Valenzuela, Park, & Kee, 2009). More than half of America's teens and young adults send instant messages and use social networking sites, and more than one-third of all Internet users engage in these activities (Jones, 2009).

With millions of users worldwide, it raises the question of what types of people rely on these online social media tools in their interactions with others. Previous research has established three personality traits that are central to social media use: extraversion, neuroticism, and openness to experience (Ross et al., 2009; Zywica & Danowski, 2008). People who are more open to experiences tend to be drawn to SNS (social networking sites), as are those with high levels of neuroticism. Individuals high in neuroticism, as well as people who are extraverted, also seem to have greater use of instant messages (Ehrenberg, Juckes, White, & Walsh, 2008).

However, these findings may not apply to the population at large. Previous studies examining personality and social media use were based on college-aged samples and did not explore the potential influencing effect of gender, nor did they control for the possible impact of life satisfaction and socio-demographic variables on users' dispositions (i.e. Ross et al., 2009; Zywica & Danowski, 2008). This study seeks to expand the literature by investigating the relationship between personality and social media use and the effect of gender and age on that dynamic in a national sample of US adults.

1.1. The role of social media use

This paper defines social media use as the particular consumption of digital media or Internet that has little to do with traditional informational media use. Rather, it provides a mechanism for the

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audience to connect, communicate, and interact with each other and their mutual friends through instant messaging or social networking sites. To our knowledge, the majority of research on social media use has solely focused on social networking sites (i.e. Ellison et al., 2007; Raacke & Bonds-Raacke, 2008; Ross et al., 2009; Zywica & Danowski, 2008; Valenzuela et al., 2009). These sites are virtual collections of users' profiles, which can be shared with others to create lists of companions and maintain contact with them (Raacke & Bonds-Raacke, 2008). The lists illustrate each user's connections with others, whose profiles are accessible by individuals included on the list. Most users (nearly 90%) visit the sites to keep in touch with people they already know, and more than half have two or more profiles online (Lenhart, 2009). This paper also builds on this typology by including instant messaging as a standalone feature of available software on the Internet or as an embedded feature of SNS.

The predominant SNS users are young adults; three-quarters of adult Internet users under age 25 have a profile on a social networking site (Lenhart, 2009). The popularity of these sites is attracting more and more adult users. In 2005, only 8% of adult Internet users had an online profile; today, that number has quadrupled to 35% (Lenhart, 2009). Social networking site users are also regular visitors, with more than one-third checking their profile page daily and almost another 25% visit every few days. Among teens, these numbers are higher – almost half said they logged into their profile at least once a day and about one-third visit weekly. In one study of college students, males and females were equally likely to have profiles on social networking sites and were found to spend about three hours each day on the sites (Raacke & Bonds-Raacke, 2008), while two studies reported the students limited themselves to an average of 10–30 min each day (Ellison et al., 2007; Valenzuela et al., 2009).

Instant messaging has also been tied to social networking site use, especially among teens. Teens who have social network profiles are more likely than their non-profile using counterparts to send and receive instant messages, and to do so more often (Lenhart, Madden, Macgill, & Smith, 2007). Today, this fact may be amplified for Internet users who seamlessly intertwine both behaviors through social networking sites, some of which allow the exchange of instant messages while logged onto the site. Across all adults online, roughly the same number use social networking sites and send instant messages, 35% and 38%, respectively (Jones, 2009). Older adults appear to be somewhat more comfortable using instant messaging over social networking sites.

These findings lead to questions of what factors may be driving the differences in individuals' use of social media tools like social networking sites and instant messaging.

1.2. Personality as a predictor of Internet and social media use

As the pool of research on Internet use grew, several scholars examined the influence of personality traits on Internet uses by utilizing the Five-Factor Model (McCrae & Costa, 1997). The Big-Five framework is a model of personality that contains five factors representing personality traits at a broad level: extraversion, neuroticism, openness to experiences, agreeableness, and conscientiousness (Ehrenberg et al., 2008; John & Srivastava, 1999). Each factor is bipolar (e.g., extraversion vs. introversion) and summarizes various specific aspects (e.g., sociability), which in turn contain more specific traits (e.g., talkative, outgoing). This model suggests that the majority of individual differences in personality can be classified into these five broad domains (Gosling, Rentfrow, & Swann, 2003).

The line of research that has examined personality and Internet uses determined extraversion and neuroticism were significantly related to online activities (i.e. Amichai-Hamburger, 2002; Amichai-Hamburger & Ben-Artzi, 2003; Amichai-Hamburger, Wainapel, & Fox, 2002). Early studies of individuals' online activities found those high in extraversion and low in neuroticism were not as heavy Internet users as their more introverted, more neurotic counterparts (Amichai-Hamburger et al., 2002). They hypothesized that the anonymity of the Internet attracted people who were less comfortable with themselves and who otherwise had trouble making connections with others. Gender differences in early studies of the Internet were also evident – introversion and neuroticism were higher among women who turned to the Internet for its social services, such as online chats and discussion groups (Hamburger & Ben-Artzi, 2000). Neuroticism, which can be manifested as loneliness, was again linked to women's Internet use in a 2003 study that posited that lonely women were drawn to the Internet perhaps as a means to reduce their loneliness (Amichai-Hamburger & Ben-Artzi, 2003).

More recent studies, however, have reflected a reversal in the association between some types of Internet use and personality traits. This may be due in part because of the restrictions on anonymity in certain types of online applications, such as social networking sites. Most people use these sites to interact with individuals they already know, therefore limiting their engagements with strangers (Lampe, Ellison, & Steinfeld, 2006). As such, these sites may be more likely to appeal to extraverts. Similarly, whereas chat rooms allow group-like conversations between individuals who are largely unknown to each other, instant messaging is commonly used for communication between single users who are more familiar with each other (e.g., Quan-Haase, 2007).

In examining personality as a potential predictor of use of social networking sites, three of the five factors showed promise: extraversion, neuroticism, and openness to experience (Ross et al., 2009; Zywica & Danowski, 2008). Extraverted individuals had many connections with others via social networking sites and in the "real world," and also tended to have higher self-esteem (Zywica & Danowski, 2008). Another study of college students found the people who used the social networking site Facebook less frequently felt less satisfied with their lives, leading the authors to speculate the site could help individuals overcome low satisfaction and low self-esteem (Ellison et al., 2007). Ross et al. (2009) found extraversion was positively related to belonging to Facebook groups, but there was no association with how they communicated on the site. They speculated the lack of instant messaging available to Facebook users may not have fulfilled their desire for immediate contact. Facebook has since introduced an instant messaging application, suggesting extraversion may now be positively correlated with SNS use.

In the case of neuroticism, it was associated with instant messaging when compared to face-to-face interaction. People high in neuroticism had greater instant messaging use (Ehrenberg et al., 2008). The authors speculate this preference over face-to-face interaction was because the instant messaging permitted additional time to contemplate responses, making it easier for more neurotic people to communicate with others.

Finally, heavier users of social networking sites reported higher levels of openness to experience (Ross et al., 2009). High openness to experience is reflected in curiosity and novelty-seeking; low levels are evident in preferences for adhering to convention and established patterns (John & Srivastava, 1999). Because social networking sites are a relatively new application of Internet technology, it is expected that those who are more open to experiences would experiment with creating online profiles.

Based on the previous literature, the following hypotheses are proposed:

Hypothesis 1: People who are more extraverted will use social media more frequently.

This hypothesis is drawn from research that has found there is a propensity for people high in extraversion to be more regular users

of social media – instant messages and social networking sites – than those individuals who are more introverted (Ross et al., 2009; Zywica & Danowski, 2008).

Hypothesis 2: People who are more emotionally stable will use social media less frequently.

This hypothesis is proposed because one of the central measures of neuroticism is emotional stability, and people with greater neurotic tendencies are drawn to certain aspects of social media, especially the text-based elements that allow contemplation before acting (Ehrenberg et al., 2008; Ross et al., 2009).

Hypothesis 3: People who are more open to new experiences will use social media more frequently.

This hypothesis is derived from a study of college students found those who were more regular users of social networking sites were also more open to experience (Ross et al., 2009).

Research Question 1: Does the relationship between personality predictors and social media use differ by gender?

This is presented as research question because initial studies on Internet use found gender differences that were linked to specific personality traits, but subsequent research has not examined whether the use of social media is also differentiated by gender and personality.

Research Question 2: Does the relationship between personality predictors and social media use differ by age?

Like research question 1, this is also posed as a research question instead of a hypothesis because of a lack of research. The existing studies that explore social media and personality are drawn from college-aged samples that do not allow for an examination of the use of social networking sites and instant messaging across generations. Because young people grew up with these digital options compared to older people who had to learn how to use them (Prensky, 2001), differences may emerge across generations.

2. Method

2.1. Sample and procedure

To examine the relationship between personality traits and social media use, an online survey was conducted among US adults in December 2008 and January 2009. This survey is based on an online panel provided by the Media Research Lab at the University of Texas at Austin. To overcome some of the limitations of using online surveys, and assure a more accurate representation of US national population, the Media Research Lab based this particular sample on two US census variables – gender (male: 50.2%; female 49.8%) and age (18–34: 30%; 35–54: 39%; 55+: 31%) – a procedure validated by previous research (Bennett & Iyengar, 2008; Vavreck, 2007; Gil de Zúñiga & Valenzuela, in press). The Media Research Lab matched a 10,000 random draw to these demographic characteristics. The selected panel members received the survey's URL through an e-mail invitation. This invitation provided respondents with a time estimate to complete the survey and information about a monetary incentive drawing for their participation. A first invitation was sent December 15, 2008 and three reminders were submitted in the following three weeks to improve response rates. A concluding reminder was sent January 5, 2009.

A total of 1432 e-mail addresses were invalid. Of the remaining 8568 participants, 1482 responded the survey, yielding a 17.3% response rate, which falls within an acceptable response rate for panel Web-based surveys (Göritz, Reinhold, & Batinic, 2002; Sax, Gilmartin, & Bryant, 2003). Based on the participants who consistently responded to the questions of interest for this investigation, a subsample of 959 cases was used for this research study. Thirty-three percent were males and 67% were women. Although the gender skew may introduce some bias into the findings, it is common

to obtain higher response rates among women in both Web and paper surveys (Sax et al., 2003). Ages ranged from 18 to 84 ($M = 46$, $SD = 12.4$). For race, 84.4% were white/Caucasian, 5% African American, 4.5% Hispanic, 3% Asian, and 1% accounted for Native American, Pacific Islander, and Other. On average, the highest level of education completed was 2-year college degree, and the average income ranged from $50,000 to 59,000.

2.2. Measures

2.2.1. Social media use

This construct was measured by an additive scale that calculated the frequency of usage of the following applications: instant messages and social networking sites. On a 10-point response scale, respondents were asked how often they use the Internet for instant messaging and social networking sites, where 1 was rarely/never and 10 was often, $r = .41$, $p < .001$ ($M = 8.03$, $SD = 5.79$).

2.2.2. Personality traits

The personality traits were measured using part of the 10-Item Personality Inventory (Gosling et al., 2003). This scale was devised as a brief measure of the Big-Five dimensions of personality, the most widely used model in psychology to classify personality traits (John & Srivastava, 1999). The 10-Item Personality Inventory has adequate levels of validity, reliability and external correlates (Gosling et al., 2003). Therefore, it can be used as a proxy for the longer Big-Five instruments (Gosling et al., 2003). In this study, three dimensions were measured that previous research has identified as relevant to new media use – extraversion, emotional stability, and openness to new experiences (Guadagno, Okdie, & Eno, 2008; Hamburger & Ben-Artzi, 2000; Ross et al., 2009). Each dimension was measured with two items. The respondents were asked to rate from 1 to 10 their level of agreement with different pairs of traits that best described them, even if one characteristic applied to them more than the other. Extraversion was constructed by adding the following two items: extraverted-enthusiastic and reserved-quiet (reversed), $r = .43$, $p < .001$ ($M = 11.35$; $SD = 4.56$), Emotional stability was measured by summing the following items: anxious-easily upset (reversed); calm-emotionally stable, $r = .47$, $p < .001$ ($M = 13.71$; $SD = 4.15$), and openness to new experiences was constructed adding the following items: open to new experience-complex; conventional-uncreative (reversed), $r = .29$, $p < .001$ ($M = 14.26$; $SD = 3.53$).

2.2.3. Life satisfaction

Because research has found life satisfaction is related to personality, especially to emotional stability, extraversion and openness to experience (Chen, 2008; Schimmack, Shigehiro, Furr, & Funder, 2008), this variable was included as a control. Level of personal contentment was measured by an additive scale of three items extracted from the Satisfaction with Life Scale developed by Diener, Emmons, Larsen, and Griffin (1985). This scale has shown high levels of internal consistency and reliability (Pavot, Diener, Colvin, & Sandvik, 1991) and has been widely used in psychology. Using a 10-point scale, respondents were asked their level of agreement ranging from 1 (strongly disagree) to 10 (strongly agree) with each of the following statements: "In most ways my life is close to my ideal," "Things in my life are difficult" (reversed), and "I'm satisfied with my life" ($\alpha = .83$, $M = 16.85$, $SD = 7.01$).

2.2.4. Socio-demographics

Respondents' socio-demographic characteristics were used as controls in the analyses for the general sample. Gender and age were also analyzed as independent variables in subsequent examinations to explore whether the relationship between personality

and social media use differ by these two variables. The first demographic variable included in the models was gender. For the analyses, male was coded as 1 and female as 0. For race, respondents were asked about their race. The options were white/Caucasian, African American, Hispanic, Asian, Native American, Pacific Islander, and Other. For the analyses, white was coded as 1 and non-white as 0. Education was measured with a single question, asking respondents for their highest level of education completed on an 8-point scale (Mdn = 4.00, SD = 1.07). To measure income, respondents were asked for their annual household income on a 15-point scale with increments of $10,000 (Mdn = 5.00, SD = 4.03). Age was asked in an open-ended question, and was included as a continuous variable in the statistical analyses.

3. Results

Of the total sample, 72.5% of the respondents use social media (74.8% of women respondents and 67.7% of men respondents). On a scale from 1 to 10, where 1 means never/rarely and 10 means often, respondents rated their average social media use at 8.03 (SD = 5.79), suggesting that, in general, Internet users employ these social applications quite often.[1] Before progressing to multivariate analysis, zero-order correlations tested the correlation among the dependent, independent and control variables (see Table 1). The independent variables of interest, i.e. personality traits, were positively correlated to each other as expected based on the literature (Gosling et al., 2003). The highest correlation was openness with extraversion, $r = .35$, $p < .001$. In general, people with high levels of extraversion tend to be more emotionally stable and open to new experiences. In the case of life satisfaction, Table 1 shows that there is a strong and positive association between being satisfied with life and being emotionally stable, $r = .39$, $p < .001$. There is also a positive correlation between life satisfaction and extraversion, $r = .14$, $p < .001$. These results suggest that people who are more extraverted and stable tend to be more content with life. There is no relationship between personal contentment with life and being open to experiences, $r = .02$, n.s.

To test whether there was a relationship between personality traits and social media use, controlling for life satisfaction, socio-demographic variables and the remaining personality traits, we conducted hierarchical multiple regressions.

The first hypothesis, people who are more extraverted will use social media more frequently, was supported. As Table 2 shows, extraversion remains significant after controlling for the respondents' socio-demographic characteristics and life satisfaction levels, $\beta = .13$, $p < .001$. People with higher levels of extraversion tend to be heavier users of social media.

The second hypothesis, people who are more emotionally stable will use social media less frequently, was also supported. Anxious and worrisome individuals tend to use social media more frequently than those who are emotionally stable, $\beta = -.08$, $p = .02$ (see Table 2).

Finally, the third hypothesis, people who are more open to new experiences will use social media more frequently, was supported as well. This means people who use social media applications more frequently tend to be more innovative and creative, $\beta = .08$, $p = .01$ (see Table 2).

In sum, the block of the demographic variables and life satisfaction of the model explained 12.5% of the variance of social media use, $F(6, 957) = 22.59$, $p < .001$. Although moderate, the relationship between life satisfaction and social media use was negative and statistically significant, $\beta = -.06$, $p = .05$. When the three per-

sonality traits were included in the second block, they explained 3.2% of social media use variance, $F(9, 957) = 19.61$, $p < .001$, and life satisfaction was no longer significant, $\beta = -.06$, $p = .11$. Among the personality traits, extraversion was the strongest predictor of social media use.

3.1. Differences by gender

Regarding the first research question, which examined whether the relationship between personality predictors and social media use differ by gender, the results revealed several differences. This is consistent with previous suggestions made by other studies (i.e. Hamburger & Ben-Artzi, 2000). For men, extraversion was positively related to social media use, $\beta = .10$, $p = .05$ while emotional stability turned out to be negatively related to the usage of these online social applications, $\beta = -.16$, $p = .003$ (see Table 3). Openness to experience was not statistically significant, $\beta = -.03$, $p = .56$. The more extraverted and anxious males were the more likely to engage in socially interactive applications of the Web. For this group, the personality traits explained 3.4% of the variance in social media use, $F(8, 314) = 15.59$, $p < .001$, and emotional stability yielded the largest standardized coefficient of the personality traits. Similar to the total sample, males' life satisfaction disappeared as a predictor when the personality traits were included in the analysis, $\beta = -.04$, $p = .50$.

For women, extraversion and openness to experience were positively related to social media use. In contrast to men, emotional stability was unrelated to social media use, $\beta = -.05$, $p = .24$ (see Table 3). Women with higher levels of extraversion and openness tend to use social media more frequently. Both extraversion and openness had similar standardized coefficients, $\beta = .14$, $p = .001$; $\beta = .12$, $p = .003$, respectively. In this group, the personality traits explained 4.3% of the variance in social media use, $F(8, 642) = 10.93$, $p < .001$. In contrast to what happened in the males' group, life satisfaction never played a role in social media use for this sample of females.

3.2. Differences by age

The second research question examined differences by age in the relationship between personality traits and social media use. To answer this question, we divided the sample into two groups: young adults (18–29 years old) and adults (30 and older). This cut is based on psychological, medical and social science research that defines young adults as those ages between 18 and 29 (e.g., Helmert, Merzenich, & Bammann, 2001; Slutske, Jackson, & Sher, 2003; Wyllie, Zhang, & Casswell, 1998; see also Arnett, 2000; Bennet, 1998; Pollock, 2008). The results show that for the young adult cohort, personality predictors explain 10.5% of the variance in social media use, $F(8, 99) = 2.56$, $p = .01$ (see Table 4). This is the largest incremental in the variance compared to the general sample and the subsamples. Among this cohort, extraversion was the only personality predictor that was related to social media use, $\beta = .31$, $p = .005$. Emotional stability and Openness were not significant, $\beta = -.15$, $p = .18$; $\beta = .06$, $p = .56$, respectively. It is also important to note the relationship between life satisfaction and social media use was almost nonexistent before, and after, introducing personality traits as predictors of the model. In other words, extraversion plays a very important role as a predictor of social media use for young adults.

For the older adult group (30 and older), extraversion and openness were positively related to social media use, $\beta = .14$, $p < .001$; $\beta = .08$, $p = .03$, while emotional stability was negatively associated, $\beta = -.15$, $p = .004$ (see Table 4). The personality predictors explained 4% of the variance in social media use, $F(8, 857) = 6.75$, $p < .001$. In contrast to the young adult cohort, life satisfaction

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[1] Of the total sample, 99.9% uses instant messages ($M = 9.6$, $SD = 1.2$) and 51.8% use social network sites ($M = 3.7$, $SD = 3.3$).

Table 1
Correlation matrix and descriptive statistics.

Variables	Means	Standard deviation	1	2	3	4	5	6	7	8	9
1. Social media use	8.03	5.79									
2. Extraversion	11.35	4.56	.14***								
3. Emotional stability	13.71	4.15	−.12***	.09**							
4. Openness	14.26	3.53	.10**	.35***	.18***						
5. Life satisfaction	16.85	7.01	−.09**	.14***	.39***	.07					
6. Gender	.32	.47	−.04	−.08	.09**	−.05	.04				
7. Race	.84	.36	−.14***	.06	−.07	0	−.03	−.02			
8. Education	4.15	1.57	.09**	.04	.12***	.06	.26***	.12***	−.04		
9. Income	6.05	4.03	−.04	.07	.15***	.06	.32***	.13***	.01	.45***	
10. Age	45.79	12.44	−.34***	−.05	.16***	.02	.04	.11**	.18**	.06	.02

$N = 959$.
** $p < .01$.
*** $p < .001$.

Table 2
Hierarchical regression on social media use.

	Model I				Model 2			
	Beta	s.e.	d.f.	p value	Beta	s.e.	d.f.	p value
Gender	−.01	.38	6	.88	.02	.38	9	.63
Race	−.08	.49	6	.007	−.10	.49	9	.001
Education	−.03	.13	6	.47	−.03	.14	9	.35
Income	−.01	.05	6	.87	−.01	.05	9	.87
Age	−.32	.02	6	.000	−.29	.02	9	.000
Life satisfaction	−.06	.03	6	.05	−.06	.03	9	.11
R^2	12.5%							
Extraversion					.13	.04	9	.000
Emotional stability					−.08	.05	9	.02
Openness					.08	.05	9	.01
R^2					15.7%			

$N = 959$.
Betas are standardized coefficients.

remained as a significant and negative predictor of social media use even after introducing the personality traits in the model, $\beta = −.08$, $p = .05$.

4. Discussion

This paper advances the literature on the uses of new technologies introduced in society by exploring the relationship between people's personality traits and user-generated applications. In particular, it focuses on social media use, a construct that captures the ways in which Internet users socialize, connect, communicate and interact with each other via instant messaging and social networking sites. We sought to predict levels of social media use based on the psychological Big-Five framework (e.g., Amichai-Hamburger et al., 2002; John & Srivastava, 1999; Ross et al., 2009), which measures individuals' personality attributions and characteristics. This paper has taken this line of research a step further in a number of ways. First, the data collected and analyzed assures US national generalizability, providing a broader and more reliable snapshot of social media users and their personality traits. Second, the models presented have controlled for the residual effect of a set of demographic variables (age, gender, race, education and income) and levels of life satisfaction to isolate the predicting relationship among our variables of interest. Additionally, the inclusion of these variables as controls was preferred because the literature has identified some personality traits being related to demographic variables. Along these lines, we found a positive relationship between age and emotional stability (see Table 1). It was important to control for life satisfaction because overall personal contentment with life is also related to personality traits and social media use (see correlations in Table 1).

In general, this study found that individuals' personality traits – extraversion, emotional stability and openness to experiences – play a role in the uses of interactive social media. These results are consistent with previous studies conducted by Amichai-Hamburger and Ben-Artzi (2000, 2002, 2003), who tested how personality played a role in Internet use, and with studies that examined online applications that involved some degree of social interaction (Guadagno et al., 2008; Ross et al., 2009).

This study supported the hypothesis that extraversion was positively related to social media use. The first studies that explored

Table 3
Regression on social media use by gender.

	Men				Women			
	Model 1		Model 2		Model 1		Model 2	
	Beta	p value	Beta	p value	Beta	p value	Beta	p value
Race	−.15	.003	−.17	.001	−.04	.32	−.06	.10
Education	−.09	.11	−.09	.10	−.07	.10	−.08	.08
Income	−.002	1.0	−.01	.79	−.02	.73	−.02	.60
Age	−.44	.000	−.42	.000	−.26	.000	−.24	.000
Life satisfaction	−.10	.05	−.04	.50	−.03	.46	−.04	.39
R^2	25.6%				7.8%			
Extraversion			.10	.05			.14	.001
Emotional stability			−.16	.003			−.05	.24
Openness			−.03	.56			.12	.003
R^2			29%				12.1%	

No. of men = 314.
No. of women = 642.
Betas are standardized coefficients.

Table 4
Regression on social media use by age.

	Young adults (18–29)				Adults (30 and older)			
	Model 1		Model 2		Model 1		Model 2	
	Beta	p value	Beta	p value	Beta	p value	Beta	p value
Gender	.05	.63	.12	.001	−.05	.13	−.03	.4
Race	−.26	.01	−.23	.10	−.09	.01	−.12	.001
Education	.01	.93	.08	.8	−.02	.57	−.03	.4
Income	−.05	.66	−.10	.000	.02	.55	.03	.52
Life satisfaction	.004	.97	.000	.50	−.09	.01	−.08	.05
R^2	6.9%				2%			
Extraversion			.31	.005			.14	.000
Emotional stability			−.15	.18			−.15	.004
Openness			.06	.56			.08	.03
R^2			18.4%				6%	

No. of young adults = 99.
No. of adults = 857.
Betas are standardized coefficients.

the relationship between personality and different uses of the Internet found extraversion was negatively related to uses of social services such as chat rooms (e.g., Hamburger & Ben-Artzi, 2000). The argument was that social interactions through these online applications differed from offline interactions due to the lesser importance of physical appearance and physical proximity (McKenna & Bargh, 2000). As a result, introverted people as well as those who experience social anxiety and loneliness tended to use the Web to assuage their real-world isolation in these early studies of Internet use (Amichai-Hamburger & Ben-Artzi, 2003; Bargh, McKenna, & Fitzsimons, 2002).

Current social media applications such as social networking sites and instant messages are different from previous research on social services because they do not provide anonymity. Therefore, this may explain why extraverted, rather than introverted, people tend to engage in social media use. This is consistent with another study that explored the relationship between personality traits and Facebook use (Ross et al., 2009). This result suggests that given the influence of these social media on today's social interactions – more than half of America's teens and young adults use them and more than one-third of all Web users engage in these activities (Jones, 2009) – Internet designers should take into account users' characteristics and needs (Amichai-Hamburger, 2002).

This investigation also found emotional stability was negatively related to social media use. In other words, people with greater levels of neuroticism and negative affectivity are more likely to engage in these social activities. Interestingly, the relationship between lower levels of life satisfaction and greater social media use disappeared when emotional stability was taken into account in the model, suggesting that higher levels of anxiety were actually predicting social media use rather than level of personal contentment with life. This finding supports previous studies that have found higher levels of neuroticism were related to the usage of Web social services such as chat rooms (Hamburger & Ben-Artzi, 2000) and instant messaging (Ehrenberg et al., 2008). Given that neuroticism is related to loneliness, a possible explanation is that anxious and nervous people use these services to seek support and company. They also provide more time for contemplation before acting compared to offline or face-to-face interactions (Ehrenberg et al., 2008; Ross et al., 2009).

The positive relationship between openness to experiences and social media use found in this study was expected given the novel nature of these technologies.

This finding, however, along with others was affected by age. The relationship between extraversion and social media use was particularly important among the young adult cohort: extraversion

was the most important predictor of social media use. Conversely, the three personality characteristic predict social media use for the more mature segment of the sample. Using the notions of digital natives and digital immigrants, Prensky (2001), concludes that many digital immigrants confront each change in technology as something new to be mastered. This research found that older people who are predisposed to being open to new activities are more likely to engage in social media use while for younger generations using the Internet as a social media tool has more to do with being extraverted. Younger people grew up with these digital options at their disposal to interact and communicate, making them digital natives (Prensky, 2001).

Gender presented another difference among personality traits. While extraverted men and women were both likely to be more frequent users of social media tools, only the men with greater degrees of emotional instability were more regular users. No significant relationship existed between women and emotional stability. This may illustrate the differences in the ways men and women communicate – women place a greater emphasis on forging connections with others and building a sense of community (Tannen, 1990). Given this gender-based tendency among women and previous findings that the vast majority of SNS users rely on it to build connections and maintain relationships (Lenhart, 2009; Raacke & Bonds-Raacke, 2008), one would expect women regardless of their demeanor to be drawn to social networking sites. Conversely, when considering the relationship between neuroticism and self-esteem, it seems men with greater emotional instability are drawn to use social media, perhaps as a way to bolster feelings about themselves by reaching out to others.

Avenues for future research include developing a richer measure of social media use. A vast list of different uses within the social media realm would greatly improve this line of research by differentiating similar forms of interaction. Similarly, our data was based on online participants' recruitment. Although this study intended to assure the most accurate representation of US national population, the final subsample yielded a larger proportion of females taking the survey than males. This should be noted as one limitation of this research study. Additionally, an experiment testing how people engage in different uses, as well as in-depth interviews, would facilitate a better understanding of this emerging phenomenon.

This paper did not test all possible dimensions of personality, instead opting for those dimensions that the literature has shown were relevant. The Big-Five model was tested with a brief index specially designed for studies that cannot test a large instrument due to time and space constraints. This instrument, however, has

been previously validated (Gosling et al., 2003), and showed consistency in this study. Evaluating for other personality traits might also predict whether citizens opt to engage in social media use, and future research should examine this possibility.

Overall, this paper contributes to the understanding of how people's personality characteristics predict their social media use on the Internet. Research needs to continue disentangling many of the psychological factors that lead people to engage in this participatory media. This type of investigation is especially relevant in an ever-increasing user-generated Web where active participation may become crucial for advancing in social spheres.

References

Amichai-Hamburger, Y. (2002). Internet and personality. *Computers in Human Behavior, 18*(1), 1–10.

Amichai-Hamburger, Y., & Ben-Artzi, E. (2003). Loneliness and Internet use. *Computers in Human Behavior, 19*(1), 71–80.

Amichai-Hamburger, Y., Wainapel, G., & Fox, S. (2002). "On the Internet No One Knows I'm an Introvert": Extraversion, neuroticism, and Internet interaction. *Cyberpsychology & Behavior, 5*(2), 125–128.

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist, 55*(5), 469–480.

Bargh, J. A., McKenna, K. Y. A., & Fitzsimons, G. M. (2002). Can you see the real me? Activation and expression of the "True Self" on the Internet. *Journal of Social Issues, 58*(1), 33–48.

Bennet, Stephen E. (1998). Young Americans' indifference to media coverage of public affairs. *Political Science & Politics, 31*, 535–541.

Bennett, W. L., & Iyengar, S. (2008). A new era of minimal effects? The changing foundations of political communication. *Journal of Communication, 58*(4), 707–731.

Chen, L. S.-L. (2008). Subjective well-being: Evidence from the different personality traits of online game teenager players. *Cyberpsychology & Behavior, 11*(5).

Diener, E., Emmons, R., Larsen, R., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*, 71–75.

Ehrenberg, A., Juckes, S., White, K. M., & Walsh, S. P. (2008). Personality and self-esteem as predictors of young people's technology use. *Cyberpsychology & Behavior, 11*(6), 739–741.

Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook "friends:" Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication, 12*(4), 1143–1168.

Gil de Zúñiga, H., Puig, E., & Rojas, H. (2009). Weblogs traditional sources online & political participation: An assessment of how the Internet is changing the political environment. *New Media & Society, 11*(4), 553–574.

Gil de Zúñiga, H., & Valenzuela, S. (in press). Disentangling facebookers: A snapshot of social network site users in the United States. In D. Wittkower (Ed.), *Facebook and philosophy*. Open Court Publishing.

Gil de Zúñiga, H., Veenstra, A., Vraga, E., & Shah, D. (in press). Digital democracy: Re-imagining pathways to political participation. *Journal of Information Technology & Politics*, 7(1).

Göritz, A. S., Reinhold, N., & Batinic, B. (2002). Online panels. In B. Batinic, U. Reips, & M. Bosnjak (Eds.), *Online social sciences* (pp. 27–47). Seattle: Hogrefe & Huber Publishers.

Gosling, S. D., Rentfrow, P. J., & Swann, W. B. J. (2003). A very brief measure of the big five personality domains. *Journal of Research in Personality, 37*, 504–528.

Guadagno, R. E., Okdie, B. M., & Eno, C. A. (2008). Who blogs? Personality predictors of blogging. *Computers in Human Behavior, 24*, 1993–2004.

Hamburger, Y. A., & Ben-Artzi, E. (2000). The relationship between extraversion and neuroticism and the different uses of the Internet. *Computers in Human Behavior, 16*, 441–449.

Helmert, U., Merzenich, H., & Bammann, K. (2001). The association between educational attainment chronic diseases, and cardiovascular disease risk factors in young adults aged 18 to 29 years: Results of the Federal Health Survey 1998. *Sozial-Und-Praventivmedizin, 46*(5), 320–328.

John, O. P., & Srivastava, S. (1999). The big five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (2nd ed., pp. 102–138). New York: Guilford.

Jones, S., & Fox, S. (2009). *Generations online in 2009. Pew Internet and American Life Project.* <http://www.pewinternet.org/Reports/2009/Generations-Online-in-2009.aspx/> Accessed 19.03.09.

Lampe, C., Ellison, N., & Steinfeld, C. (2006). A face(book) in the crowd: Social searching vs. social browsing. In *Proceedings of the 2006 20th anniversary conference on computer-supported cooperative work (CSCW 2006)* (pp. 167–170). New York: ACM Press.

Lenhart, A. (2009). *Adults and social network Web sites. Pew Internet and American Life Project.* <http://www.pewinternet.org/Reports/2009/Adults-and-Social-Network-Websites.aspx/> Accessed 19.03.09.

Lenhart, A., Madden, M., Macgill, A. R., & Smith, A. (2007). *Teens and social media. Pew Internet and American Life Project.* <http://www.pewinternet.org/Reports/2007/Teens-and-Social-Media.aspx/> Accessed 19.03.09.

McCrae, R. R., & Costa, P. T. (1997). Personality trait structure as a human universal. *American Psychologist, 52*, 509–516.

McKenna, K. Y. A., & Bargh, J. A. (2000). Plan 9 from cyberspace: The implications of the Internet for personality and social psychology. *Personality & Social Psychology Review, 4*(1), 57–75.

Park, N., Kee, K. F., & Valenzuela, S. (2009). Being immersed in social networking environment: Facebook groups, uses and gratifications, and social outcomes. *CyberPsychology & Behavior, 12*. Retrieved on September 10, 2009 from http://www.liebertonline.com/toc/cpb/0/0.

Pavot, W. G., Diener, E., Colvin, C. R., & Sandvik, E. (1991). Further validation of the satisfaction with life scale: Evidence for the cross-method convergence of well-being measures. *Journal of Personality Assessment, 57*, 149–161.

Pollock, G. (2008). Youth transitions: Debates over the social context of becoming an adult. *Sociology Compass, 2*(2), 467–484.

Prensky, M. (2001). Digital natives, digital immigrants. *On the Horizon, 9*(5), 1–6.

Quan-Haase, A. (2007). College students' local and distance communication: Blending online and offline media. *Information, Communication and Society, 10*(5), 671–693.

Raacke, J., & Bonds-Raacke, J. (2008). MySpace and Facebook: Applying the uses and gratifications theory to exploring friend-networking sites. *Cyberpsychology & Behavior, 11*(2), 169–174.

Ross, C., Orr, E. S., Sisic, M., Arseneault, J. M., Simmering, M. G., & Orr, R. R. (2009). Personality and motivations associated with Facebook use. *Computers in Human Behavior, 25*(2), 578–586.

Sax, L. J., Gilmartin, S. K., & Bryant, A. N. (2003). Assessing response rates and non response bias in web and paper surveys. *Research in Higher Education, 44*(4), 409–432.

Schimmack, U., Shigehiro, O., Furr, R. M., & Funder, D. C. (2008). Personality and life satisfaction: A facet-level analysis. *Personality and Social Psychology Bulletin, 30*(8), 1065–1075.

Slutske, W. S., Jackson, K. M., & Sher, K. J. (2003). The natural history of problem gambling from age 18–29. *Journal of Abnormal Psychology, 112*(2), 263–274.

Tannen, D. (1990). *You just don't understand: Women and men in conversation.* New York, NY: Ballatine.

Valenzuela, S., Park, N., & Kee, K. F. (2009). Is there social capital in a social network site? Facebook use, and college students' life satisfaction, trust, and participation. *Journal of Computer-Mediated Communication, 14*(4), 875–901.

Vavreck, L. (2007). The exaggerated effects of advertising on turnout: The dangers of self-reports. *Quarterly Journal of Political Science, 2*(4), 325–343.

Wyllie, A., Zhang, J. F., & Casswell, S. (1998). Positive responses to televised beer advertisements associated with drinking and problems reported by 18 to 29-year-olds. *Addiction, 93*, 749–760.

Zywica, J., & Danowski, J. (2008). The faces of Facebookers: Investigating social enhancement and social compensation hypotheses. *Journal of Computer-Mediated Communication, 14*(1), 1–34.