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Differences Between People Who Use Only Facebook And Those Who Use Facebook Plus Twitter

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Abstract

Facebook (FB) and Twitter are popular social networking sites. This study examined differences between those who use both sites versus only FB, to test the hypothesis that mono-users differ in their personality characteristics from users active in both websites. Participants were 205 undergraduate students; 96 only used FB, 109 used FB and Twitter. Participants who used both sites reported significantly lower loneliness, higher number of FB friends, and lower number of minutes spent online, as compared to those who only used FB. Loneliness was positively associated with FB use only in those who used FB alone, but was negatively associated with and negatively predicted both FB and Twitter use in those who used both websites. Findings suggest that more intense use of online interactions is more frequently found in mono-users (people using only Facebook) as compared to those using both websites, and it is predicted by increased feelings of loneliness. The current study findings provide additional insights on what personality factors may make some people prone to excessive use of social networking sites.

Keywords

Social networking sites; Facebook; Twitter; Loneliness; Personality; Conscientiousness

1. Introduction

Recently, there has been a dramatic proliferation in use of social networking sites (SNSs), which has profoundly transformed the way people socialize, seek out and share information (Hughes, Rowe, Batey & Lee, 2012). Almost 80% of Internet users report some SNS use, which accounts for approximately one quarter of the total time spent online (Panek, Nardis, & Konrath, 2013). SNSs can be defined as internet-based services that give individuals the

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None of the authors have any potential financial or personal conflict of interest to declare.

ability to: 1) create a public or semi-public profile; 2) share the profile with other users; 3) view and track one's own connections as well as those made by others (Boyd & Ellison, 2007).

Among all SNSs, Facebook (FB) and Twitter are two of the most popular and booming. Based on recent reports, FB is the number one social networking site as of March 2014 with 1.28 billion of users (Facebook, 2014), and Twitter currently totals more than 241 million active users (Twitter, 2014). These sites have become one of the primary channels people use to interact with one another, disseminate information, and influence peers.

Although both FB and Twitter enable online social interaction, they show distinctive characteristics and have different functions. FB enables users to create visible profiles which, at a minimum, require a user's name, gender, date of birth, and e-mail address. Beyond these basic fields, users can also post information about themselves, ranging from their occupation to their religious and political views, and a photograph. Further, FB allows users to send private and public messages and to interact in real time instant messaging. Twitter users, on the other hand, do not need to post information about themselves to create an account and find 'friends'. Twitter enables users to update their account only with text-based messages of up to 140 characters, known as "tweets", and until recently did not allow users to directly post photos. Other users are able to 'follow' these updates but not to access their personal information. Therefore, the aim of this SNS seems to be the sharing of opinions and information rather than the reciprocal social interaction of users. This site focuses less on one's identity and more on the content of one's message, thus allowing users a greater anonymity than FB (Huberman, Romero, & Wu, 2009).

1.1. Personality characteristics associated with FB and Twitter use

The dramatic rise in the use of FB and Twitter has attracted considerable research attention, much of it devoted to exploring relationships between psychological traits and the use of such sites (Błachnio, Przepiórka, & Rudnicka, 2013; Kim, Kim, & Nam, 2010; Nadkarni & Hofmann, 2012). In fact, there is a growing body of evidence that suggests individual differences are influential in guiding on-line behavior (Brandtzæg, Lüdgers, & Skjetne, 2010), and steering the user's preference toward a particular website rather than another (e.g. Amiel & Sargent, 2004; Hughes et al., 2012; Ryan & Xenos, 2011). In regard to FB, for example, it has recently been suggested that its use is mainly motivated by two primary needs: (1) the need to belong and (2) the need for self-presentation (Nadkarni & Hofmann, 2012). The authors propose a model in which demographic and cultural factors contribute to the need to belong, whereas neuroticism, narcissism, shyness, self-esteem, and self-worth contribute to the need for self-presentation. Recent research has also observed significant differences in personality between those who use FB and those who use Twitter. To examine the role of personality in the use of the internet, researchers have been inclined to use the Five-Factor-Model or Big Five, consisting of five personality traits: Neuroticism (i.e. low Emotional Stability), Extraversion, Conscientiousness, Openness (Intellect or Imagination), and Agreeableness (Costa & McCrae, 1992; Goldberg, 1990; Goldberg, 1999). Hughes and colleagues (2012), for example, have found that both FB and Twitter can be used to attain two major purposes: socialization and information acquisition. People higher in Sociability

and Neuroticism were more prone to use FB for social reasons, while the use of Twitter to socialize was related to higher Openness, Sociability, as well as lower Conscientiousness. Additionally, the informational use of FB was positively correlated with Neuroticism, Extraversion, Openness, and Sociability but negatively correlated with Conscientiousness. Instead, the use of Twitter to acquire information was found to correlate positively with Conscientiousness, and negatively with Neuroticism, Extraversion, and Sociability. Several personality differences were also associated with users' declared *preference* for FB rather than Twitter: users higher in Sociability, Extraversion, and Neuroticism showed a preference for FB, whilst those who favored Twitter exhibited a higher level of Need-for-Cognition, defined as an individual's propensity to seek out cognitive stimulation (Hughes et al., 2012; Verplanken 1993).

Other commonly discussed traits associated with behavior on SNSs are narcissism, loneliness, and shyness. Several studies have explored how narcissism and behavior on SNSs are related, inferring that the growth of SNSs may have made available a tool to seek admiration on a larger scale that would otherwise not be feasible for narcissistic individuals (Konrath, O'Brien, & Hsing, 2011; Panek et al., 2013). For example, it has been shown that FB users are more narcissistic, but less conscientious and socially lonely than non-users (Ryan & Xenos, 2011). Concerning the differences between FB and Twitter users, recent findings have suggested that, for college students, the use of FB is associated with the Exhibitionism component of narcissistic personality (i.e. the tendency to show off to gain admiration), while Twitter is related to the Superiority component (i.e. the belief of being better than others). Adults high in Superiority, in contrast, tend to post on FB significantly more than Twitter (Panek et al., 2013). Research has also shown social loneliness to be positively related to time spent using FB and negatively related to the number of close FB friends (Lemieux, Lajoie, & Trainor, 2013). Similar results were found in a study examining the relationship between shyness and FB use in undergraduate students (Orr, Sisic, Ross, Simmering, Arseneault, & Orr, 2009). Shy individuals had fewer friends on FB than non-shy individuals. At the same time, shy individuals spent more time on FB and had a more favorable attitude toward FB (Orr et al., 2009). On the other hand, other findings (Ryan & Xenos, 2011) contradict those reported by Orr and colleagues (2009), showing no significant relationship between shyness and frequency of FB use.

1.2. The present study

Although several studies have investigated the role of individual differences in the use of FB rather than Twitter (Hughes et al., 2012; Panek et al., 2013), there are currently no studies exploring the differences in personality between those who use one of these two websites alone, and those who use both FB *and* Twitter. This is relevant, considering that many users tend to be active in more than one SNS, a phenomena that has recently lead to the formation of the so called "social network aggregation platforms" (Bian, YiChang, YunFu, & Wen-YenChen, 2012). These aggregation services allow users to collect content from multiple social network services, pulling together information into a single location or consolidating multiple social networking profiles into one profile (Benevenuto, Rodrigues, Cha, & Almeida, 2012). Since FB and Twitter differ in terms of personality predictors of their use, it is possible that individuals who use only FB differ in their motivation and personality traits

not only from those who use Twitter alone, but also from those who use both Twitter and FB. For example, it has recently been suggested that young people may move from using only FB to using both FB and Twitter when their social and psychological needs change (Wiederhold, 2012). FB can initially meet their social networking demands, because it supports multiple functions and allows users to connect with a wide circle of friends. Progressively, with FB friends numbering in the hundreds, they may start to also use Twitter, because it allows them to connect and share links and opinions with a more select circle of friends and like-minded individuals. Therefore, the use of both these SNSs, instead of just one, could reflect different personality and motivational aspects of users. People using both websites could therefore show characteristics (number of FB friends, total number of minutes spent online) that are not explainable by simply ‘summing up’ the characteristics of people using only one of those websites. For example, users of both FB and Twitter could dedicate the same or even smaller amount of time to online social networking, as compared to people using only one of those websites, because motivations behind SNS use may be different, generating this possible counterintuitive effect. In order to examine this issue, we explored differences in FB and Twitter use, alone or in combination, in narcissism, loneliness, shyness, and the Big Five Personality Traits (emotional stability, agreeableness, conscientiousness, extraversion, and intellect or imagination). In the present study, nobody reported using Twitter only.

In line with previous findings (Panek et al., 2013), we expected narcissism to be positively related to FB use both in “FB only” users (people using only FB) and in “FB plus Twitter” users (people using both FB and Twitter), with the latter group showing a stronger correlation with narcissism than the former one. In fact, those who are active in more than one SNS could be motivated by a greater desire to seek admiration, and to use on-line interactions as a means for self-enhancement and self-promotion. We also hypothesized Twitter use to be associated with narcissism, as already found by Panek and colleagues (2013). Nonetheless, as results regarding the strength of the relation between SNS use and narcissism are somewhat mixed (Mehdizadeh, 2010; Ryan & Xenos, 2011), we expected them not to be overall strongly correlated.

We predicted FB use to positively correlate with subjective feelings of loneliness in the “FB only” group, as previous research suggests (Lemieux, et al., 2013; Ryan & Xenos, 2011). Conversely, we expected to observe no significant correlation between both SNS use and loneliness in the “FB plus Twitter” group. Users who are also active on Twitter, which focuses on anonymity and the content of a message instead of the direct interaction of users, may use SNSs in general, not to escape feelings of loneliness but as an information-gathering tool, as previous findings suggest (Hargittai & Litt, 2011).

Following this line of reasoning, we expected to also find no significant difference in the amount of minutes “FB only” users spend online compared to “FB plus Twitter” users. In fact, it’s possible that the overall number of minutes spent online is not related to the number of SNSs someone is active on, but rather to the individual’s use of these websites.

With regards to shyness, in line with previous findings (Orr et al., 2009), we expected a correlation between FB usage and shyness in “FB only” users. However, we expected to

find lower or no correlation of shyness with both FB usage and Twitter usage in “FB plus Twitter” users. These outcomes may stem from the fact that shy people tend to feel more comfortable maintaining social relationships in online settings such as FB, where all other users are potentially also known in the real life, than Twitter, where all the users could remain anonymous and unknown (Sheeks & Birchmeier, 2007). Therefore, those who find both types of SNS appealing may not use these platforms, in general, as a way to avoid the discomfort shy individuals usually experience in social situations.

With respect to the domain of the Big Five personality traits, we expected to confirm some of the relationships already found in other studies. Nonetheless, we predicted personality to not be very strongly related to online behavior, as Hughes and colleagues (2012) have clearly showed.

Emotional Stability is defined as a measure of affect and emotional control, with high levels indicating good control over emotions and stability. Previous research has shown Neuroticism (i.e. low Emotional Stability) to be related to greater Internet use particularly in relation to social uses (Amichai-Hamburger & Ben-Artzi, 2003; Butt & Phillips, 2008). We therefore expected to find Emotional Stability to be negatively related to FB and Twitter use, without differences between the two groups.

Agreeableness has been described as a measure of how friendly, sympathetic, cooperative, and warm people are (Costa & McCrae, 1992). Previous studies have generally found this trait to be unrelated to Internet and social media usage (Correa, Willard, & Gil de Zúñiga, 2010; Hughes et al., 2012) and we expected to confirm these results in our sample, regarding both FB and Twitter usage.

Conscientiousness describes high levels of thoughtfulness, self-discipline, good impulse control, and goal-directed behaviors (Costa & McCrae, 1992). Previous research (Ross et al., 2009) has found no significant correlation between Conscientiousness and FB activities and a negative correlation between Conscientiousness and Twitter usage (Hughes et al., 2012). It was expected that this personality trait would have a negative correlation with Twitter and FB usage, but only in “FB plus Twitter” group of users. The use of more than one SNS could in fact serve as a distraction and maybe endorse procrastination, which tends to be in contrast with the typical orderliness and thoroughness of those high in this personality trait.

Extroverts typically enjoy human interactions and tend to be enthusiastic, talkative, assertive, and gregarious. Extraversion has been shown to correlate positively with the use of FB (Ryan & Xenos, 2011) and negatively with the informational use of Twitter (Hughes et al., 2012). The usage of both FB and Twitter, with the increased number of interactions that this potentially entails, may appeal more to those who report themselves higher in Extraversion. We hypothesized a positive correlation with both FB and Twitter usage in the “FB plus Twitter” group. However, the relationship between Extraversion and FB usage in the “FB only” group may not be so straightforward. It might be expected that people using only one SNS to show a less intense relationship between FB usage and this personality trait.

Individuals high in Intellect or Imagination (Openness) show aesthetic sensitivity, attentiveness to inner feelings, preference for variety, and intellectual curiosity (Costa & McCrae, 1992). This trait has been shown to correlate with the use of SNSs (Correa et al., 2010), with the social (but not informational) use of Twitter, and with the informational (but not social) use of FB (Hughes et al., 2012). Given these mixed results, we expected this trait to be associated with FB and Twitter usage in both groups, but that the relationship would not be strong, as previous studies seem to suggest (Hughes et al., 2012).

2. Material and Methods

2.1 Participants

A total of 214 self-selected students at Boston University participated in the study to obtain course credit. Participants had to be between 18 and 23 years old. Four individuals were excluded from the analyses because of missing data on the FB/Twitter use measures or the participants' statement that they used neither FB nor Twitter. Two individuals reporting FB/Twitter use did not complete any of the self-report measures, and were also excluded from the analyses. Of the remaining participants ($N = 205$), 109 used both FB and Twitter, whereas 96 only used FB. None of the respondents only used Twitter.

2.2 Materials

Participants conducted the study online. The study material included an informed consent statement; five non-identifying demographic questions relating to age, gender, ethnicity, home, and local residency (see Table 1 for item wording); and a battery of self-report measures consisting of a FB intensity scale, a Twitter intensity scale, the UCLA Loneliness Scale, the Narcissistic Personality Inventory (NPI-16), the Revised Cheek and Buss Shyness Scale (RCBS-20), the International Personality Item Pool (IPIP), and the Marlowe-Crowne Social Desirability Scale. Each measure is described below.

2.2.1 Facebook Intensity Scale—This scale (Cronbach's $\alpha = 0.83$) consists of eight questions relating to FB use, and was adapted from the Facebook Intensity Scale (Ellison, Steinfeld, & Lampe, 2007). The measure includes two self-reported assessments of FB behavior: the number of FB "friends", and the amount of time spent on FB on a typical day. This measure also includes five Likert-type scale attitudinal questions that evaluated the extent to which FB is integrated into the participant's daily activities (see Table 1). The degree of use (called FB use intensity) was determined using a previously utilized formula (Ellison et al., 2009), whereby the raw scores on the five Likert-type scale prompts regarding quality of use were added to logarithmic bases of (1) the number of FB friends reported, and (2) the average number of minutes spent on FB (per day) over the past week.

2.2.2 Twitter Intensity Scale—This measure was adapted from the FB intensity scale as described above. The Twitter use intensity was therefore calculated by summing the raw scores on the five Likert-type scale and the logarithmic bases of (1) number of followers reported, and (2) the average number of minutes spent on Twitter (per day) over the past week (Table 1).

2.2.3. UCLA Loneliness Scale (Version 3)—This scale (Russell, 1996) assesses one's subjective feelings of loneliness as well as feelings of social isolation. It shows high reliability (Cronbach's alpha values range between 0.89 to 0.94, depending on the population and a test-retest reliability correlation of 0.73). In the current study, the Cronbach's alpha was 0.93. The scale consists of 20 items, rated on a 5-point Likert-type scale. 10 items were positively-worded and the other 10 were negatively-worded. The negatively-worded items were reverse-scored before summing the score of each item to yield the final score. A higher final score reflects a higher state of feeling lonely.

2.2.4. Narcissistic Personality Inventory – 16-item version (NPI-16)—The NPI-16 (Ames, Rose, & Anderson, 2006) is an abbreviated and unidimensional variant of the NPI-40. The reliability of the scale is acceptable (Cronbach's alpha = 0.72). This 16-item forced-choice format personality questionnaire also has notable face, internal, discriminant, and predictive validity. Higher scores indicate more narcissistic personality. Each item of the scale had two possible responses, one of them being consistent with narcissism. The response consistent with narcissism was given a score of 1, whereas the other response was given a score of 0. The score for each of the 16 items was summed and averaged to yield the final score.

2.2.5. Revised Cheek and Buss Shyness Scale (RCBS-20)—Shyness was measured by the RCBS-20 (Cheek & Melchior, 2008). There are several versions of the Cheek and Buss Shyness (CBS) Scale, which vary in the number of items contained in the questionnaire. The version used in the present study consisted of 20 items rated on a 5-point Likert-type scale. Scores can range from a minimum of 20 (very non-shy) to a maximum of 100 (very shy). The RCBS-20 was demonstrated to be reliable in the present study (Cronbach's alpha = 0.88). Six of the twenty items were reverse-scored before summing the score of each item to yield the final score (Cheek & Krasnoperova, 1990; Melchior & Cheek, 1990; Cheek & Briggs, 1990).

2.2.6. International Personality Item Pool (IPIP)—The IPIP questionnaire (Goldberg, 1999) has two versions depending on the number of items contained. The version used in the current study is the 50-item IPIP (short version) rated on a 5-point Likert-type scale, ranging from 1 (very inaccurate) to 5 (very accurate). The IPIP is a multi-scale inventory with a range of subscales. For the purposes of this study, subscales consisting of 10 items each assessed for the Big-Five personality factors (Extraversion (E), Agreeableness (A), Conscientiousness (C), Emotional Stability (ES), and Intellect or Imagination (I)). The 50-item IPIP Big-Five markers all show high internal consistency (> 0.8). In addition, 24 of the 50 items were keyed negatively; these were reverse-scored before summing the score of each item to yield the final score on each subscale. Higher scores for the IPIP Big-Five personality factors represent higher likelihood to be more extraverted, agreeable, conscientious, emotionally stable, intellectual or imaginative, respectively.

2.2.7. The Marlowe-Crowne Social Desirability Scale—The Marlowe-Crowne Social Desirability Scale (M-C SDS; Crowne & Marlowe, 1960) is a 33-item true-false scale that is commonly used to measure social desirability. The M-C SDS shows good internal

consistency (KR-20 = 0.88) and test-retest reliability ($r = 0.89$). The M-C SDS is generally used to identify items in a survey that correlate with high M-C SDS scores as probable targets for misreporting (Bradburn & Sudman, 1979). A score of 1 was given for true and 0 for false, and 15 of the 33 items were keyed negatively; these were reverse-scored before summing the score of each item to yield a final score. Higher M-C SDS scores therefore reflect a greater degree of socially-desirable responding. The M-C SDS was utilized in the current study to ensure that responses to questionnaires were not tainted by social desirability bias.

2.3 Procedure

Approval for the study was obtained from the Boston University Charles River Campus Institutional Review Board. Users were recruited through a flier posted on a bulletin board in the Psychology Department of Boston University. Participants were directed to a website with a description of the study's intent, the informed consent statement, and the link to participate. Research course credit for an introductory psychology class was offered as an incentive for participation. Participating individuals clicked on the link and were taken to the online questionnaire package, hosted on the third-party website PsychData. After reading the informed consent statement, participants had to check a box indicating whether they agreed to participate in the study. Those consenting proceeded to the online questionnaire package. Those who did not were thanked for their time. After completing all of the items, participants clicked to the thank you page, where they could collect course credit for their participation by printing out a verification code and physically handing it to the designated assistant. The raw data was imported for analysis.

2.4. Data Analysis

Participants were grouped based on their use of each social media type within the last week. Two major groups emerged: those who used only FB (the "FB only" group; $n = 96$) and those who used both FB and Twitter (the "FB plus Twitter" group; $n = 109$). These two groups were used for all subsequent analyses. Nobody reported using Twitter only.

Three types of analysis were performed: (1) correlational analyses in each group between FB and Twitter use intensity, and scores at the independent constructs of interest, namely: M-C SDS total score, UCLA Loneliness score, RCBS-20 score, NPI-16 score, and the IPIP Big Five subscales (Extraversion (E), Agreeableness (A), Conscientiousness (C), Emotional Stability (ES), Intellect or Imagination (I)); (2) multiple regression analyses to determine unique model contributions by each major independent variables for the dependent variables (FB and Twitter use intensity scores) in both groups; (3) one-way ANOVAs to examine the effect of SNSs usage (FB only or both FB and Twitter) on scores at construct of interest: FB intensity, number of FB friends, number of minutes spent on FB (per day), the overall number of minutes spent on SNSs (per day), Loneliness, Shyness, Narcissism, and the 5 IPIP dimensions (Extraversion, Agreeableness, Conscientiousness, Emotional Stability, Intellect or Imagination).

3. Results

The study recruited a total of 205 participants who completed the survey. The descriptive characteristics of each group (“FB only” vs. “FB plus Twitter” users) are provided in Table 2. Generally, the samples using FB only or both social network sites were made up of a majority of women and were similar in their age distribution and racial make-up. There was, however, a significantly higher proportion of Hispanic participants using FB only as compared to those using FB and Twitter (16.5% vs. 8.5%, $\chi^2 = 16.70$, $p < 0.001$). There were no other significant demographic differences between those using FB only versus FB and Twitter.

3.1 Bivariate Correlational Analyses

First, in order to ensure that results were not tainted by social desirability bias, Pearson’s correlation coefficients were calculated between all other self-report questionnaires and the Marlowe-Crowne Social Desirability scale, and non-significant correlations were found for all of them.

FB and Twitter intensity use were significantly positively correlated with one another in the “FB plus Twitter” group, $r = 0.39$, $p < 0.01$. In particular, the number of FB friends was positively correlated with the number of Twitter followers, $r = 0.23$, $p < 0.05$; similarly, the average number of minutes spent on FB (per day) was positively correlated with the average number of minutes spent on Twitter (per day), $r = 0.29$, $p < 0.01$.

For those in the “FB only” group, bivariate correlations revealed a significant positive association between FB use intensity and scores on the IPIP- Extraversion subscale. The average number of minutes spent on FB (per day) was positively and significantly correlated with UCLA Loneliness scale. No other significant correlations existed between FB use intensity and the other independent variables (other IPIP subscales, RCBS-20, NPI-16). Correlations for this group are shown in Table 3.

For those in the “FB plus Twitter” group, there was a positive bivariate correlation between FB use intensity with IPIP-Extraversion, and with IPIP-Agreeableness. FB use intensity had a significant and negative correlation with UCLA Loneliness scale. Twitter use intensity showed a significant positive correlation with IPIP-Extraversion, and a significant negative correlation with Conscientiousness. Furthermore, there was also a significant negative associations between minutes spent on Twitter per day and the UCLA Loneliness scale. We observed no other significant correlations between FB/Twitter use and the remaining independent measures examined. Correlations for this group are shown in Table 4.

3.2. Regression Analyses

Linear regressions were utilized to test the strength of these associations, in order to assess the relative contribution of each independent variable on the dependent variable in each group. For the “FB only” group, all independent variables (UCLA Loneliness, RCBS-20, NPI-16, and the IPIP Big Five subscales) were entered into the regression model. The model was first assessed for absence of multicollinearity ($VIF < 10$), linearity, low incidence of outliers (standard residuals between -3.3 and 3.3), and homogeneity of variance, to ensure

none of these assumptions were violated. These indices indicated an appropriate inclusion of all predictors in the regression model. However, none of the independent variables in this regression revealed significant and unique contribution to FB use intensity in individuals using FB only, and the model itself was not significant as a whole, with the predictors explaining only approximately 15% of the variance in FB use in this group, $R^2 = .15$, $F(8, 83) = 1.85$, $p > 0.5$.

The same analysis was conducted for the “FB plus Twitter” group. After ensuring adherence to the assumptions of multiple regression, two regression models were tested: (1) prediction of FB use intensity by all eight independent variables (UCLA Loneliness, RCBS-20, NPI-16, and the IPIP Big Five subscales); and (2) prediction of Twitter use intensity by all independent variables. Results of the first regression model revealed that the independent predictors included explained 30.0% of the variance, $R^2 = .30$, $F(8, 100) = 5.36$, $p < .001$. FB use intensity in this group was significantly predicted by lower UCLA, $\beta = -.33$, $t(100) = -2.48$, $p < .05$, lower IPIP-Conscientiousness scores, $\beta = -.24$, $t(100) = -2.54$, $p < .05$, and by higher IPIP-Extraversion, $\beta = .43$, $t(100) = 2.93$, $p < .01$, and higher IPIP-Agreeableness scores, $\beta = .21$, $t(100) = 1.98$, $p < .05$.

Twitter use intensity was significantly predicted by lower UCLA, $\beta = -.29$, $t(100) = -2.03$, $p < .05$, and lower IPIP-Conscientiousness, $\beta = -.21$, $t(100) = -2.1$, $p < .05$. The independent predictors in this model explained approximately 20 % of the variance in Twitter use in this group, $R^2 = .20$, $F(8, 100) = 3.01$, $p < .01$.

3.3. Univariate Analyses of Variance

A series of one-way ANOVAs was conducted to determine the effect of SNSs usage (FB only or both FB and Twitter) on the dependent variables of interest: FB intensity, number of FB friends, number of minutes spent on FB (per day), the overall number of minutes spent on SNSs (per day), Loneliness, Shyness, Narcissism, and the 5 IPIP dimensions. “FB only” users showed significantly higher average number of minutes spent on FB (per day) in the past week, $F(1, 199) = 12.78$, $p < .001$, partial $\eta^2 = .06$, as compared to those using both FB and Twitter (*means*: 256.82 and 128.84, respectively). The average number of minutes “FB only” users spend on FB was also significantly higher than the *total* number of minutes “FB plus Twitter” users spend online, $F(1, 199) = 4.97$, $p < .05$, partial $\eta^2 = .02$, *means*: 256.82, and 171.45, respectively. “FB plus Twitter” users reported a significantly higher number of FB friends as compared to “FB only” users, $F(1, 199) = 4.01$, $p < .05$, partial $\eta^2 = .02$, *means*: 680.91, and 584.30, respectively. “FB only” users had significantly higher scores on UCLA Loneliness as compared to “FB plus Twitter” users, $F(1, 199) = 4.27$, $p < .05$, $\eta^2 = .02$, *means*: 42.55 and 39.79, respectively. We observed no other significant differences in scores for the remaining measures examined.

4. Discussion

The current study aimed to identify some of the personality characteristics connected to the use of FB alone or in association with Twitter. Several studies have recognized the role of individual differences in steering the user’s preference of FB rather than Twitter (Hughes et al., 2012; Panek et al., 2013). However, to our knowledge, there have been currently no

studies exploring the differences in personality between those who use one of these two sites alone and those who use both FB *and* Twitter. This is relevant, considering that many users tend to be active in more than one SNS, a phenomena that has recently lead to the formation of the so called “social network aggregation platforms” (Bian, YiChang, YunFu, & Wen-YenChen, 2012). In order to examine this issue, we explored differences in FB and Twitter use, alone or in combination, in Narcissism, Loneliness, Shyness, and the Big Five Personality Traits (Emotional Stability, Agreeableness, Conscientiousness, Extraversion, and Intellect or Imagination) in a sample of college students. Participants in our study clustered into one of two groups: a larger group of those who used both FB and Twitter (approximately 53%) and a smaller group of those who used only FB (approximately 47%). Both groups were made up of a majority of women and there were no significant differences in age distribution and racial make-up. There was, however, a significantly higher proportion of Hispanic participants using FB only as compared to those using FB and Twitter. There were no other significant demographic differences between those using FB only versus FB and Twitter.

Non-significant Pearson’s correlation coefficients between the several questionnaires and the Marlowe-Crowne Social Desirability scale were found, showing that results were not tainted by social desirability bias. In the “FB plus Twitter” group, FB and Twitter intensity use were significantly positively correlated with one another. The number of FB friends was positively correlated with the number of Twitter followers, and the average number of minutes spent on FB (per day) was positively correlated with the average number of minutes spent on Twitter (per day). Unlike findings of previous studies (Hughes et al., 2012; Panek et al., 2013), we found that people using one of the two SNSs were more likely to be active also in the other platform, despite Twitter differing from FB in certain functional ways. This could be explained by the fact that Twitter allows users to link their FB account, such that their tweets can be posted to their FB profile.

Narcissism, Shyness, IPIP- Intellect or Imagination, and Emotional Stability showed no significant associations with FB and Twitter use, in both groups. Even though this was contrary to our expectations, these results were not completely surprising, given that previous results regarding the connection between these variables and SNSs use are somewhat mixed and not always significant (Hughes et al., 2012; Mehdizadeh, 2010; Ryan & Xenos, 2011). Small sample sizes and the use of different questionnaires employed to measure these variables in previous studies may also be responsible for these inconsistent results. In particular, in regards to narcissism, the null association with social media use could be attributed to the current study’s examination of intensity of FB use rather than specific self-promotional behaviour.

The prediction that FB use would be correlated to subjective feelings of loneliness in the “FB only” group, as previous research suggests, was partially supported. In fact, the number of minutes spent on FB in the past week and Loneliness were positively correlated. Conversely, in the “FB plus Twitter” group, a negative correlation between both SNS use and Loneliness was found. In this group, both FB and Twitter use were also significantly predicted by lower UCLA Loneliness scores, and “FB plus Twitter” users had significantly lower scores on UCLA Loneliness as compared to “FB only” users. Therefore, users who

are active in both websites seemed to use SNSs, in general, not to escape feelings of loneliness, as people using FB only do (Hargittai & Litt, 2011). In fact, the number of minutes “FB only” users spend on FB was significantly higher than the *total* number of minutes “FB plus Twitter” users spend online, but the “FB plus Twitter” users reported a significantly higher number of FB friends as compared to “FB only” users. These results indicate that the number of SNSs available to the users is not responsible, per se, for the amount of time the users spends online. In fact, our research seems to suggest that more intense use of online interactions is more frequently found in the mono-users (in this case, people using only FB), and it is connected to and predicted by increased feelings of loneliness. This sheds some light on the mechanisms that could potentially lead some people to develop what has been called ‘SNS Addiction’ (Byun et al., 2009): an excessive use of social networking sites that could lead to several life impairments such as neglect of personal life and relationships, depression, social anxiety, and poor communication skills (Kittinger, Correia, & Irons, 2012). Increased knowledge about risk factors may be used to inform prevention and interventions related to problematic SNS use.

Our finding that Extraversion and Agreeableness are positively correlated with, and predictive of FB use, but only in the “FB plus Twitter” group, is also consistent with this hypothesis. In line with our expectations, Conscientiousness was found to have a negative correlation with, and negatively predict Twitter and FB usage, but only in “FB plus Twitter” group of users. The use of more than one SNS could in fact serve as a distraction and maybe endorse procrastination, which tend to be in contrast with the typical orderliness and thoroughness of those high in this personality trait.

4.1. Limitations, future directions and conclusions

Of note are the limitations of the current study. Because students obtained course credit for their participation, the results could have reflected a sample bias of participants. Moreover, self-report measures of SNS use are subject to memory errors (over-estimating or under-estimating total amounts of use). Finally, the sample was modest in size, exclusively composed of college students, and nobody reported using Twitter only. Despite these limitations, the current study points to subtle, but nevertheless important, differences between individuals who use FB only and those who use FB and Twitter. Therefore, researchers interested in the relationship between personality and SNS use should differentiate not only between FB and Twitter use but also between the use of each of these sites alone or in combination. Moreover, the present study found evidence for an increased number of minutes spent online by mono-users (FB only users) as compared to multi-users (“FB plus Twitter” users). This could provide additional insights on what factors make some people prone to excessive use of SNSs. Future research could extend this type of exploration to people using only Twitter and to people using other SNSs (MySpace, Instagram, Tumblr) in order to identify what qualities make a particular SNS more “addictive” than another.

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Table 1**Items Assessed on Facebook and Twitter Intensity Scales**

For the first two questions, please write your response. For all other questions in this Intensity Scale, please select the answer choice that best describes your view of your usage of Facebook and Twitter.

- | | |
|----------|--|
| 1 | About how many total Facebook/Twitter friends/followers do you have? |
| 2 | In the past week, on average, approximately how many minutes per day have you spent on Facebook/Twitter? |
| 3 | Facebook/Twitter is part of my everyday activity. |
| 4 | I am proud to tell people I am on Facebook/Twitter. |
| 5 | Facebook/Twitter has become part of my daily routine. |
| 6 | I feel out of touch when I have not logged onto Facebook/Twitter for a while. |
| 7 | I feel I am part of the Facebook/Twitter Community. |
| 8 | I would be sorry if Facebook/Twitter shut down. |
-

Note. The responses for items 1 and 2 were open-ended (number of friends and minutes spent in the past week, respectively) and the response scale for the remaining items 3–8 ranged from 1 to 5, in which 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree. To calculate FB/Twitter use intensity scores, the following formula was used: Use Intensity = log (Item 1) + log (Item 2) + average (Items 3 to 8).

Table 2

Descriptive data for “Facebook only” versus “Facebook plus Twitter” users

	FB Users Only	Both FB and Twitter Users
Number of Users	96	109
Gender (% females)	76.0%	65.1%
Age (in years)		
< 18	1.3%	1.8%
18–22	98.7%	98.2%
Ethnicity		
White	65.8%	67.5%
African American	2.5%	4.8%
Native American	0.0%	1.6%
Asian	31.6%	24.6%
Hawaiian/Pacific Islander	0.0%	1.6%
Ethnicity		
Hispanic	16.5%	8.7%
Non-Hispanic	83.5%	91.3%
Number of FB friends (mean)	583.70	680.9
Number of Twitter followers (mean)	–	68.8
Number of minutes of FB usage in the past week (mean)	256.82	128.84
Number of minutes of Twitter usage in the past week (mean)	–	42.6
Total number of minutes spent on SNSs in the past week (mean)	256.82	171.45

Note. The table shows descriptive characteristics of Facebook (FB) users only and both FB and Twitter users through numbers, percentages (%), and means; Total $N = 207$ participants, 2 people had to be excluded due to missing data on some measures. In the “FB only” group, the total number of minutes spent on SNS equals the number of minutes spent on FB. In the “FB plus Twitter” group, it equals the sum of minutes spent on FB and the minutes spent on Twitter.

Table 3

Correlations between FB use and personality characteristics in the “FB only” group (n = 96)

	FB Friends	FB Min	FB Intensity
FB Friends	1		
FB Min	0.18	1	
FB Intensity	.66(**)	.65(**)	1
UCLA (Loneliness)	−0.04	.20(*)	0.03
NPI-16 (Narcissism)	0.03	0.11	0.14
RBCS-20 (Shyness)	−0.06	0.03	−0.05
IPIP-Extraversion	.44(**)	−0.17	0.20(*)
IPIP-Agreeableness	0.06	−0.05	0.01
IPIP-Conscientiousness	0.11	−0.08	0.05
IPIP-Emotional Stability	−0.19	−0.13	−0.17
IPIP-Intellect or Imagination	−0.02	−0.14	−0.11

Note.

*
 $p < .05$ (two-tailed);**
 $p < .01$ (two-tailed)

Table 4

Correlations between FB use, Twitter use, and personality characteristics in the “FB plus Twitter” group (n = 109)

	FB Friends	FB Min	FB Intensity	Twitter Followers	Twitter Min	Twitter Intensity
FB Friends	1					
FB Min	0,1	1				
FB Intensity	,74(**)	,65(**)	1			
Twitter Followers	,23(*)	0,05	0,1	1		
Twitter Min	0,07	,29(**)	,23(*)	,20(*)	1	
Twitter Intensity	,34(**)	,24(*)	,39(**)	,58(**)	,69(**)	1
UCLA (Loneliness)	-,19(*)	-,19(*)	-,31(**)	0,14	-,25(*)	-,0,17
NPI-16 (Narcissism)	0,17	-,02	0,15	0,14	0,06	0,15
RBCS-20 (Shyness)	-,0,17	-,03	-,0,12	-,0,14	0,05	-,0,11
IPIP-Extraversion	,33(**)	,21(*)	,38(**)	0,15	0,09	,25(**)
IPIP-Agreeableness	,20(*)	0,14	,22(*)	0,07	-,0,08	0,05
IPIP-Conscientiousness	-,0,09	-,04	-,0,16	-,0,08	-,25(**)	-,19(*)
IPIP-Emotional Stability	0,07	0,03	0,08	0,12	-,26(**)	-,0,11
IPIP-Intellect or Imagination	-,0,05	0,11	0,06	-,0,07	-,0,15	-,0,11

Note.

* $p < .05$ (two-tailed);

** $p < .01$ (two-tailed)