

ABSTRACT

Associations Between Self-Reported Narcissism, Self-Esteem, and Social-Emotional Functions of Facebook

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The popularity of Facebook has instigated a wealth of research from the fields of psychology and social media. Narcissism and self-esteem have been independently linked to Facebook usage and Facebook-related behaviors. Few studies have explored, however, the interaction between narcissism and self-esteem and one's emotional connection to Facebook. In this study, participants completed the Narcissistic Personality Inventory (Raskin & Terry, 1988), the Rosenberg Self-Esteem Scale, (Rosenberg, 1965), the Balanced Inventory of Desirable Responding (Paulus, 1984), and a self-generated Facebook Activity Questionnaire. Through factor analysis, an aggregate "Facebook Emotional Connection" variable was created. Bivariate correlations reveal a significant positive relationship between narcissism and self-esteem. In addition, self-esteem demonstrated a significant negative association with Facebook Emotional Connection, and narcissism demonstrated a positive association with Facebook Emotional Connection, but it did not reach significance. A statistical trend emerged although the magnitude of the effect was small. Implications for the continual growth of social media and its effects on psychological well-being are discussed.

Keywords: narcissism, self-esteem, Facebook Emotional Connection

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ASSOCIATIONS BETWEEN SELF-REPORTED NARCISSIM, SELF-ESTEEM, AND
SOCIAL-EMOTIONAL FUNCTIONS OF FACEBOOK

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DEDICATION

To Magistra Casasent, my high school Latin teacher. Your work as an educator and your natural kindness has inspired me to become a professor.

CHAPTER ONE

Introduction

Social networking sites give the term “six degrees of separation” a whole new meaning. The increasing popularity of social media has revolutionized the way we communicate with friends and family, the way we learn about popular culture, and even the way we discover breaking news or world events. The most renowned social networking site, Facebook, used by teenagers, college students, and businesses alike, generated 845 million active users at the end of December 2011. According to the “Facebook Newsroom” on their website, Facebook also boasts 483 million daily active users, 425 million monthly active users of Facebook mobile devices, and translations of the social network in more than 70 languages (“Facebook Newsroom Fact Sheet,” 2012). Founded in 2004 by Mark Zuckerberg, Facebook began as a means to connect students in college networks, but quickly expanded to high-school domains and large corporations.

The motives behind Facebook usage have become increasingly vast. The purpose of this current study is to investigate the dual nature of narcissism and self-esteem in social network usage. Specifically, participants’ levels of narcissism and self-esteem were examined in relation to their emotional connection to Facebook. I begin by reviewing relevant literature exploring reasons why people use Facebook. Next, I will trace different personality constructs associated with Facebook usage and Facebook-related behaviors. Then, an examination of how narcissism and self-esteem have been individually linked to Facebook will follow. Finally, I will discuss past research on the relationship between narcissism and self-esteem. From the perspective of narcissism and fragile high self-

esteem, I propose that these two characteristics may be working in tandem to fuel one's motivation for Facebook usage.

Why Do People Use Facebook?

“Founded in 2004, Facebook’s mission is to make the world more open and connected. People use Facebook to stay connected with friends and family, to discover what’s going on in the world, and to share and express what matters to them” (“Facebook Newsroom Fact Sheet,” 2012). Since its inception in 2004, Facebook has evolved beyond a simple profile page where people share their likes and dislikes. Individuals use Facebook for a number of reasons beyond simply staying connected. Smock, Ellison, Lampe, and Wohn (2011) found that the predictors of overall Facebook usage included relaxing entertainment, expressive information sharing, and social interaction. However, motivation for using the social network depended on specific Facebook tools. Status updates were primarily used for expressive information sharing while wall posts were employed for habitual past time, professional advancement, and social interaction (Smock, Ellison, Lampe, & Wohn, 2011). Moreover, the comments feature was positively related to relaxing entertainment, companionship, and social interaction, and private messaging was positively related to professional advancement and social interaction (Smock et al., 2011).

As new features of Facebook advance and emerge, individual and group differences for utilizing Facebook inevitably follow. For example, Park, Kerk, and Valenzuela (2009) discovered four primary reasons for joining Facebook groups: socializing, entertainment, self-status seeking, and information. Moreover, Livingstone (2008) found that younger teens used social media to develop a more elaborate profile

and identity where increased self-disclosure and intimacy was present. Barker (2009) also found gender differences related social network usage: women were more likely to use social media to communicate with their peers, and men were more likely to use social media for social compensation and social identity gratifications. DeAndrea, Shaw, and Levine (2010) observed cultural differences in online expression and personal information shared. Similarly, Kim, Kim, and Nam (2010) found that interdependent self-construal was related to motivation for social network usage and lead to satisfaction with social network usage. The growth of social media and the possibilities with Facebook communication amplifies its popularity and growing user proportions.

People are connected to their friends and family through Facebook, but they may also be connected to Facebook itself. Sheldon, Abad, and Hinsch (2011) found that both connection and disconnection to Facebook resulted in greater usage. Individuals were using the social networking site to fill a void in relatedness and to garner benefits of social interaction (Sheldon, Abad, & Hinsch, 2011). One of the most overlooked reasons for using Facebook is simple information sharing. Users create Facebook profiles in the first place to interact with friends and family in an online community and to establish and maintain rapport. A recent study evaluating the effects of self-disclosure on relational intimacy on Facebook found that self-disclosure amount and positivity was significantly associated with intimacy, and the need for affiliation was significantly associated with relationship maintenance and relationship initiation (Park, Jin, & Jin, 2011). It is human nature to want to preserve and uphold relationships; online interaction is one of many ways to foster desired intimacy. Self-disclosure fuels a cycle of reciprocity, and individuals are able to connect with others in ways they may not have imagined.

Social connectedness and social interaction fuel the popularity of Facebook usage. According to Cheung, Chui, and Lee (2011), students use Facebook because there is strong social presence of other users and because it is considered a group norm. The social presence of other online users may provide interactions similar face-to-face encounters, and group norms greatly facilitate and strengthen the growth of different connections. Other research such as Nadkarni and Hofmann (2012) proposed that Facebook use is motivated by the need to belong and the need for self-presentation. They found that demographic and cultural factors influenced the need to belong while the need for self-presentation was related to personality variables such as neuroticism, narcissism, shyness, self-esteem, and self-worth; both of these models predicted Facebook usage (Nadkarni & Hofmann, 2012). Facebook itself has evolved so much in the past eight years that it seems logical that people's connection and usage of the social network would simultaneously evolve. Examining Facebook usage from the perspective of personality and individual differences may provide greater insight into the ubiquity of the powerful social network.

The Immersion of Personality and Facebook

Past research has implicated various personality characteristics as motivation for active Facebook participation (Amichai-Hamburger & Vinitzky, 2010; Buffardi & Campbell, 2008; Gonzales & Hancock, 2010). One personality construct of particular interest for social networking lies in shyness. Shyness is a unique trait to investigate in online communities, as shy individuals may be more open to virtual interactions with others. Online social networking is an alternative for shy individuals to fulfill their need for social connectedness and to readily establish close relationships with others. Baker

and Oswald (2010) found that individuals high in shyness, compared individuals low in shyness, reported higher Facebook usage and greater friendship quality. Similarly, Orr et al. (2009) found that shyness was positively correlated to time spent on Facebook and positive attitudes towards social networks. These findings demonstrate that Facebook and other online social networking sites provide a climate for fulfilling diverse needs.

Much research has also been conducted on the relationship between the Big Five personality traits, the motivation for Facebook use, Facebook behaviors, and Facebook self-presentation, respectively. Ross et al. (2009) found some support for Extraversion and Openness to Experience as motivation for Facebook use; their results also suggest that Facebook participation depended on the different features of Facebook. For example, research has demonstrated a curvilinear relationship between extraversion and the number of Facebook friends (Tong, Van Der Heide, Langwell, & Walther, 2008). Amichai-Hamburger and Vinitzky (2010) examined Facebook activity and found that extroverted individuals have a significantly higher number of friends, neurotic individuals prefer posting photos to their Facebook profile, and agreeable individuals used less page features. In addition, individuals scoring high on openness to experience employed more features from the personal information section, and conscientious individuals also reported a higher number of friends (Amichai-Hamburger & Vinitzky, 2010).

Gosling, Augustine, Vazire, Holtzman, and Gaddis (2011) discovered similar findings for Facebook-related behaviors. In a self-report study, they found that extraversion reflected the need for socialization and predicted the frequency of Facebook usage and higher levels of Facebook activity (Gosling, Augustine, Vazire, Holtzman, &

Gaddis, 2011). Moreover, higher agreeableness predicted the frequency of viewing different pages, individuals low in conscientiousness spent more time viewing pages and more time on Facebook, individuals scoring high in openness was associated with adding and replacing photographs, while reports of neuroticism was not significantly related to Facebook-related behaviors studied (Gosling et al., 2011). Within the same set of experiments, Gosling et al. (2011) examined behavioral residue on participants' actual Facebook profiles and found that extraversion was again related to the need for social connection, and openness was related the number of friends overall. Taken altogether, these studies suggest that people often translate their offline behaviors to online communities according to their personality traits.

Although different personality constructs may manifest in Facebook-related behaviors, there have been some contention about whether Facebook profiles exhibit true or idealized personalities. Zhao, Grasmuck, and Martin (2008) found evidence that Facebook identities are what individuals hope to project and achieve in offline environments. Based on their Facebook profiles, participants want to present an image where they were popular among friends, well-rounded, and thoughtful (Zhao, Grasmuck, & Martin, 2008). Furthermore, Underwood, Kerlin, and Farrington-Flint (2011) suggest there are essentially two types of Facebook users: broadcasters who engage in self-promoting behaviors and communicators who aim to maintain relationships. In light of the information age and technology-driven communication, it has become easier to create socially desirable images of oneself. Self-presentation easily thrives in online environments because identities may be constructed or camouflaged as necessary.

Several studies illustrate, however, that the contrary may be true: Facebook

profiles correspond to genuine personality constructs. The idealized virtual-identity hypothesis claims that profile users present idealized version of their personalities while the extended real-life hypothesis argue that profile users demonstrate their true personalities (Back et al., 2010). Contrasting the Big Five characteristics with ideal-self ratings and observer reports, Back et al. (2010) found evidence supporting the extended real-life hypothesis, and this was particularly true for extraversion and openness. Another study on the relationship between the Big Five personality traits and Facebook profile impressions found agreement for all dimensions with extraversion exhibiting the greatest association (Gosling, Gaddis, & Vazire, 2007).

As mentioned previously, as social networks progress and the number of users increase, the reasons for computer-mediated communication will continue to diversify. Personality characteristics may vary with time, and the age range of users may largely explain discrepancies in face-to-face encounters and online interactions. Research has shown that people are better able to express their true selves in online domains, but are equally likable in face-to-face interactions and based off of their Facebook profiles (Bargh, McKenna, & Fitzsimons, 2002; Weisbuch, Ivcevic, & Ambady, 2009). People have multiple identities and different social roles. Incongruities between online and offline identities are imminent.

The Narcissism Bandwagon

Research on the Big Five dimensions and Facebook has clearly demonstrated a relationship between personality and online social networks. Narcissism is one specific personality construct that has gained momentum in the past few years. According to the Diagnostic and Statistic Manual of Mental Disorders (2000), about 1% of the population

suffers from Narcissistic Personality Disorder (NPD). In order for an individual to meet the diagnostic criteria for NPD, he or she must possess five or more of the following symptoms:

1.) grandiose sense of self-importance 2.) preoccupation with fantasies of unlimited success, power, brilliance, beauty, or ideal love 3.) believes that he or she is “special” and unique and can only be understood by or should associate with other special or high-status people or institutions 4.) requires excessive admiration 5.) sense of entitlement 6.) interpersonally exploitative 7.) lacks empathy 8.) envious of others or believes that others are envious of him or her 9.) demonstrates arrogant, haughty behaviors or attitudes. (4th ed., text rev.; *DSM-IV-TR*; American Psychiatric Association, 2000)

Although diagnoses of NPD are fairly rare in today’s society, its symptoms, or personality characteristics, are not. Narcissistic personality traits are very much alive in everyday encounters with strangers or with friends. Grandiosity and entitlement distinguish most individuals from narcissism and healthy self-confidence (Brown, Budzek, & Tamborski, 2009). While narcissism may not always be recognized as a personality disorder, it may be viewed as a personality defect. The Narcissistic Personality Inventory (NPI) used widely in social and personality research represents a non-clinical measure of narcissism and was developed with normal populations in mind (Rosenthal & Hooley, 2010). The authors created items to assess general characteristics associated with symptoms of narcissism described by the *DSM-III* at the time (Raskin & Terry, 1998; Rosenthal & Hooley, 2010). It can be argued that narcissists are on a continual search for different outlets to satisfy the image they have crafted of themselves. Past research indicates associations between narcissism and academic dishonesty (Brunell, Staats, Barden, & Hupp, 2011), favorable body image (Jackson, Ervin, & Hodge, 1992), competitiveness and hyper-competitiveness (Luchner, Houston, Walker, & Houston, 2011), and leadership in organizational contexts (Campbell, Hoffman,

Campbell, & Marchisio, 2011). With the rise in social networking sites and the intensifying need to feel connected through social media, one outlet for narcissists to translate their behaviors is Facebook. Many studies have proposed that Facebook unintentionally provides a springboard for narcissists to gratify their inflated views of themselves, their attention-seeking behaviors, or their need for the affirmation of their uniqueness.

Past research indicates that greater narcissism reflects greater participation in social networking sites. For example, narcissism was positively related to having as many social networking site friends as possible, to the belief that their friends are interested in knowing what they are doing, and the importance of a positive image through the social networking site's profile (Bergman, Farrington, Davenport, & Bergman, 2011).

Bergman, Farrington, Davenport, and Bergman (2011) believe these findings are tailored to the Millennial Generation as the explosion of social media is specific to the cohort and their different motives for social network usage. Moreover, Buffardi and Campbell (2008) found that narcissism predicted higher levels of Facebook activity and more self-promoting content. Specifically, high scores on the Narcissistic Personality Inventory has demonstrated positive correlations with self-promoting information about the self, self-promoting quotes, main photo attractiveness, and main photo self-promotion composite (Buffardi & Campbell, 2008). As suggested by some researchers, social networking sites allow individuals to develop and maintain idealized identities (Zhao et al., 2008; Underwood, Kerlin, and Farrington-Flint, 2011). The flexibility and ability to engage in self-promotion and impression management may be drawing narcissists to social media outlets.

Evidence claiming narcissism is a primary motivation for Facebook usage is growing. In one study investigating self-presentation and narcissism on Facebook, researchers found that narcissism predicted specific features of Facebook endorsing self-generating content (Ong et al., 2010). Narcissism predicted higher self-ratings of Facebook profile pictures and higher frequency of updating Facebook statuses (Ong et al., 2010). Ryan and Xenos (2011) discovered that Facebook users have greater levels of total narcissism, exhibitionism, and leadership compared to non-Facebook users. In addition, participants scoring higher on exhibitionism predict greater usage of status updates and photos (Ryan & Xenos, 2011). As narcissism literature suggests, narcissistic individuals expect excessive adoration and possess fantasies of their brilliance and beauty. Facebook features such as status updates and profile pictures allow narcissists to maintain their air of superiority and uphold the image they have built of themselves both online and offline.

The Implications of Self-Esteem

Most research has examined personality variables associated with Facebook usage and Facebook-related behaviors. Although such studies have provided a glimpse into understanding the popularity, growth, and attachment to Facebook participation, it is also necessary to consider the psychological states associated with Facebook use. One avenue to explore this relationship is to investigate self-esteem. Larson and Buss (2009) describe self-esteem as the extent to which one perceives oneself as being relatively close to the person one wants to be or relatively distant from the kind of person one does not want to be. In short, it is the degree to which a person evaluates his or her own worth.

Social comparison is also a concern related to self-esteem. Downward social

comparison occurs when people compare themselves to people who are worse than them on a particular trait or ability (Larsen & Buss, 2009). While this type of social comparison is self-protective and self-enhancing in nature, people may develop an inflated view of themselves. Upward social comparison occurs when people compare themselves to people who are better than they are on a particular trait or ability (Larsen & Buss, 2009). Although this type of social comparison helps individuals strive for excellence, this tactic can also be disparaging. When people compare themselves to others who are better off, their self-esteem may decrease as they create unrealistic expectations of their behavior and performance.

Given this information, self-esteem fluctuation and social network usage may have a dual effect on each other. On the one hand, self-esteem may predict increased social networking usage as individuals employ social media to share who they are. In this manner, social networks help shape and solidify identity. On the other hand, social networks can cause self-esteem fluctuations in that people inevitably find themselves engaging in social comparison. Facebook social connections have the potential to alter people's view of themselves and to challenge their own self-worth.

The Self-Esteem Bandwagon

Several studies regarding self-esteem and Facebook usage have been examined. There is evidence of a strong association between Facebook use and social capital for lower self-esteem individuals than high self-esteem individuals (Steinfeld, Ellison, & Lampe, 2008). In another study, the intensity of Facebook usage was positively correlated with individuals' perceived bridging social capital, and individuals with low self-esteem and low satisfaction with life gained more social capital if they used

Facebook more intensely (Ellison, Steinfield, & Lampe, 2007). While Facebook was mainly developed for virtual connection, it has also become a springboard for individuals to gain social rewards. Similar to research on shyness and social networks, individuals with low self-esteem may use social networking tools to garner more social connections and to develop their own competencies (Baker & Oswald, 2010; Orr et al., 2009).

Forest and Wood (2012) recently published a study contending the benefits of Facebook usage for individuals with low self-esteem. In Experiment one, they found that people with low self-esteem perceived Facebook as an avenue for self-expression and believed Facebook offers more opportunities to connect with other users (Forest & Wood, 2012). The next two experiments examined the relationship between positive and negative status updates on likability by strangers and friends, respectively. When low self-esteem individuals expressed more negativity in status updates, strangers liked them less. When low self-esteem individuals expressed more positivity in status updates, friends liked them more (Forest & Wood, 2012). Overall, these findings suggest that individuals with low self-esteem gain social rewards under specific circumstances. Self-disclosure generates favorable responses only in the presence of positivity. This may greatly affect individual identity and well-being.

The relationship between self-esteem and Facebook has also been studied in the context of psychological well-being. Kalpidou, Costin, and Morris (2011) found a negative association between minutes spent on Facebook and self-esteem. They also have evidence suggesting that individuals with a stronger emotional connection to Facebook report lower self-esteem (Kalpidou, Costin, & Morris, 2011). Furthermore, Gonzales and Hancock (2011) found that individuals report lower self-esteem when they view other

user's profiles, and individuals report higher self-esteem when they view their own profile under self-awareness. Given the opportunity to make changes to their profile, individuals report higher self-esteem because they are able to engage in self-presentation (Gonzales & Hancock, 2011). Taken together, social comparison may underlie changes in self-esteem. The more time people engage in Facebook activity, the more apt they are to contrast their social lives to other users. Although social networking sites allow individuals to connect with other people and to gain needed social capital, they may also inadvertently cause individuals to re-evaluate their self-worth.

Do Narcissism and Self-Esteem Mix?

Narcissism and self-esteem have been independently linked to motivations for Facebook usage and explanations of Facebook activity. But is there a common denominator between the two personality variables? Much research and many theories have been put forth about the relationship between narcissism and self-esteem. In efforts to evaluate the construct validity of the Narcissistic Personality Inventory (NPI), Emmons (1984) found positive correlations between narcissism and different personality constructs, among them self-esteem. Examining narcissistic self-esteem management, Raskin, Novacek, and Hogan (1991) found intercorrelations between hostility, grandiosity, dominance, and narcissism, and these constructs taken together predict variations in self-esteem. Furthermore, Zeigler-Hill, Clark, and Pickard (2008) explored two subtypes of narcissism and discovered a positive correlation between the grandiose subtype and self-esteem and a negative correlation between the vulnerable subtype and self-esteem. Tracy, Cheng, Robins, and Trzesniewski (2009) found evidence suggesting

self-esteem and narcissism are distinct constructs separated by types of pride: genuine self-esteem is related to authentic pride, and narcissism is related to hubristic pride.

One theory advanced by Kernis (2003) suggests that narcissists have fragile high self-esteem. He takes a similar stance to Morf and Rhodewalt (2001) who propose that narcissists are concerned with self-esteem promotion and protection (Kernis, 2001). Compared to individuals with secure high self-esteem, individuals with fragile high self-esteem need external justification to maintain favorable attitudes towards themselves (Kernis, 2003). Narcissists may also display high levels of explicit self-esteem to disguise their low levels of implicit self-esteem (Bosson et al., 2008; Zeigler-Hill, Myers, & Clark, 2010). Other indications of fragile high self-esteem include contingent self-esteem, where individuals base their self-worth off of specific ambitions and achievements, and self-esteem instability, where individuals experience changes in self-worth daily (Crocker & Wolfe, 2001; Deci & Ryan, 1995; Kernis, 2003).

Several studies offer support to the theory of narcissism and fragile high self-esteem. For example, Kernis and Sun (1994) examined narcissism and reactions to interpersonal feedback. With positive feedback, narcissists with high self-esteem judged the evaluator as more competent, and with negative feedback, narcissists with high self-esteem judged the evaluator as less competent (Kernis & Sun, 1994). These results lend support to the idea that narcissistic individuals engage in behaviors to protect their self-esteem. Moreover, Zeigler-Hill, Myers, and Clark (2010) investigated narcissism and self-esteem reactivity in regards to negative achievement events. They found that individuals with higher narcissism were related to decreased state self-esteem and higher

negative achievement ends; this follows the notion of contingent self-esteem and self-esteem instability (Zeigler-Hill, Myers, & Clark, 2010).

Of the few studies examining narcissism and self-esteem on Facebook, Mehdizadeh (2010) found that participants high in narcissism and low self-esteem reported greater online activity and more self-promotion content. Although data was analyzed separately for the two constructs, these results are a stepping-stone to assess how narcissism and self-esteem may drive Facebook activity and interaction together.

Hypothesis

Past research indicates that narcissism and self-esteem have been associated with Facebook usage and Facebook activity. I propose that narcissism and self-esteem are also related to an individual's emotional connection to Facebook. Specifically, narcissism will be positively correlated with participants' Facebook emotional connection, and self-esteem will be negatively correlated with participants' Facebook emotional connection. Furthermore, assuming the perspective of narcissistic fragile high self-esteem, I believe an interaction between narcissism and self-esteem will emerge and predict participants' emotional connection to Facebook. This study addressed these conjectures through the use of self-report measures, bivariate correlation, partial correlation, factor analysis, and multiple regression.

CHAPTER TWO

Methods

Participants and Procedures

Baylor University college students were recruited through SONA Systems, the Psychology and Neuroscience Department's research participation scheduling website, to take the Facebook and Personality Lab Study and the Facebook and Personality Online Study. Forty-three participants completed the online survey in an on-campus research lab, and 150 participants completed the online survey during their own time. Eighteen participants were excluded from analysis because they did not have a Facebook account, they did not meet the age requirement for participation, or the online survey questions were largely incomplete. Subsequently, 175 participants (147 women, 28 men, $M_{\text{age}} = 19.2$ years, age range: 18-26 years) were included in final data analysis. Racial and ethnic group identifications were as follows: 62.3% Caucasian or White, 13.1% African-American or Black, 11.4% Asian, 9.7% Hispanic, and 3.4% Multiracial. Each participant received one research participation credit in an introductory psychology class or extra credit in a psychology class as determined by their class instructor.

Measures

Participants were asked to complete an online survey that included measures of personality and questions about their activity on Facebook. The online survey consisted primarily of four self-report questionnaires generated through Qualtrics, an online survey software tool. The four self-report questionnaires included measures of narcissism, self-esteem, social desirability, and Facebook activity. In addition, the online survey contained several other components. Demographic questions asked participants to list

their age, gender, and racial/ethnic group. Filter questions were included to eliminate inappropriate data. A sample item reads: “Do you have a Facebook account?” Moreover, three self-esteem thermometer questions taken from Greenwald and Farnham (2000) were placed before the personality measures, after the personality measures, and after questions related to Facebook activity to assess if participants were negatively affected by questions they had answered previously. The self-esteem thermometer reads: “Please rate how warm or cold you feel toward yourself (0° coldest feelings, 50° neutral feelings, 100° warmest feelings).” Lastly, there was an open-ended text response box at the end of the survey where participants were encouraged to share their thoughts about the survey.

Narcissism

Participants completed the Narcissism Personality Inventory (Raskin & Terry, 1988). The NPI contains 40-paired statements consisting of a narcissistic and non-narcissistic response. Participants were asked to choose the statement that they most agreed with and aligned with their attitudes. Sample items included: “I will be a success” versus “I am not too concerned about success” and “I am much like everybody else” versus “I am an extraordinary person.” Responses ranging from 0 to 40 were totaled such that higher scores indicated more narcissistic personalities. Cronbach’s alpha for the Narcissism Personality Inventory was .84.

Self-Esteem

Self-esteem was examined using Rosenberg’s Self-Esteem Scale (Rosenberg, 1965). Participants responded to 10 items dealing with their general feelings toward themselves. They were asked to report the degree to which they agreed or disagreed with

each statement. The RSE scale used a 4-point Likert scale ranging from strongly agree to strongly disagree. Sample items included: “I feel that I have a number of good qualities” and “I feel I do not have much to be proud of.” Responses were totaled such that higher scores indicate higher self-esteem, and lower scores indicate lower self-esteem.

Cronbach’s alpha for the Rosenberg Self-Esteem scale was .87.

Balanced Inventory of Desirable Responding

Social desirability was determined using the Balanced Inventory of Desirable Responding (Paulus, 1984). The BIDR consists of two distinct subscales, Impression Management (IM) and Self-Deceptive Enhancement (SDE), containing 20 items each. Altogether, the BIDR contains 40 items asking participants to determine whether each statement was true or not true of them. It is based on a 7-Point Likert scale ranging from not true to very true. Sample items on the Impression Management subscale included: “I don’t care to know what other people think of me” and “I never regret my decisions.” Cronbach’s alpha for the Impression Management subscale was .70. Sample items on the Self-Deceptive Enhancement subscale included: “I never swear” and “I have some pretty awful habits.” Cronbach’s alpha for the Self-Deceptive Enhancement Subscales was .69.

Facebook Activity

The Facebook Activity questionnaire is a self-generated survey that assessed the frequency of Facebook usage, the motives for using Facebook, and one’s emotional connection to Facebook. Sample questions probing for the frequency of Facebook usage included: “On average, how many times do you log onto Facebook a day?” and “On average, how often do you change your profile picture?” Questions regarding the motives

for using Facebook usage were in the form of multiple choice questions and type-in-text responses. Sample items regarding the motives for using Facebook included: “I log onto Facebook to feel connected with others” and “I use Facebook to maintain friendships.” These items were based on a 5-Point Likert scale ranging from strongly agree to strongly disagree. Lastly, emotional connection to Facebook contained questions such as: “Facebook is a part of my daily routine” and “I feel it is important to update my status.” These items were also based on a 5-Point Likert scale ranging from strongly agree to strongly disagree. Furthermore, the Facebook Activity Questionnaire also included questions such as, “How many friends on Facebook do you have?” and “How many profile pictures do you have on Facebook?” to examine general personality variables.

CHAPTER THREE

Results

Descriptives

Table 1 presents an overview of participants' different Facebook characteristics. On average, participants have 702 Facebook friends, 44 profile pictures, and spend almost two hours on Facebook a day. Table 2 depicts an overview of participants' various Facebook usage and functions. In general, participants report using Facebook out of boredom, out of habit, to read what others are doing, to share photos, and to look at pictures they are tagged in.

Table 1

Overview of Facebook Characteristics

Facebook Characteristic	<i>M</i>	<i>SD</i>	Range
Number of Facebook Friends	702.56	398.97	98.00-2140.00
Number of Profile Pictures	44.43	67.65	1.00-800.00
Number of Tagged Pictures	665.45	554.11	2.00-2360.00
Number of Times Update Status*	2.67	0.79	1.00-4.00
Hours on Facebook a Day**	1.89	1.53	0.00-8.00
Hours Spent Updating Profile a Day	0.15	0.16	0.00-.70
Hours Spent Reading News Feed a Day**	1.07	1.23	0.00-8.00
Years Have Had Facebook	4.39	1.42	1.00-7.00

Note. *This item was based on a 4-point scale where "1" indicated often and "4" indicated never. ** These items are based on a 9-point scale where "0" indicated 0 hours and "8" indicated 8 hours.

Table 2
Overview of Facebook Function and Usage

Facebook Function or Usage	<i>M</i>	<i>Mdn</i>	<i>Mode</i>	<i>SD</i>
I log onto Facebook out of boredom.	1.60	1.00	1.00	0.84
I log onto Facebook out of habit.	1.90	2.00	1.00	1.05
I log onto Facebook for communication.	2.41	2.00	2.00	1.08
I log onto Facebook to feel connected with others.	2.57	2.00	2.00	1.18
I use Facebook to read what others are doing.	1.94	2.00	2.00	0.79
I use Facebook to share what I'm doing.	2.80	2.00	2.00	1.18
I use Facebook to share photos.	1.99	2.00	2.00	1.01
I use Facebook to look at photos I am tagged in.	1.91	2.00	2.00	0.87
I use Facebook to make new Friends.	3.81	4.00	4.00	1.12
I use Facebook to maintain friendships.	2.06	2.00	2.00	0.98
I use Facebook to keep up with current social events.	2.37	2.00	2.00	1.10
I use Facebook to keep up with current world events.	3.61	4.00	4.00	1.13

Note. These items were based on a 5-Point Likert scale where “1” indicated strongly agree and “5” indicated strongly disagree.

Bivariate Correlations

Pearson product-moment correlation coefficients were computed to assess the relationship between different Facebook variables and narcissism and self-esteem, respectively. Table 3 displays the association between participants’ general Facebook characteristics and self-reported measures of narcissism and self-esteem. Table 4 presents the relationship between 17 selected Facebook emotional connection items and self-reported measures of narcissism and self-esteem. The Facebook emotional connection

items reflect questions that assessed participants' attachment to Facebook as a social media tool and their view of self in relation to their social network usage.

Narcissism

In regard to general Facebook characteristics, there were small, positive correlations between narcissism and the number of Facebook friends ($r = .20, p < .01$), the number of times participants updates their status ($r = .17, p < .01$), and hours spent on Facebook for a day ($r = .16, p < .05$). There were no significant relationships between narcissism and the number of profile pictures or tagged pictures on Facebook.

Many significant relationships emerged between narcissism and the Facebook emotional connection items. For example, there were small, positive correlations between narcissism and needing Facebook to feel connected to the social world ($r = .16, p < .05$), feeling it is important to share accomplishments ($r = .21, p < .01$), feeling it is important to share current frustrations ($r = .18, p < .05$), believing that Facebook is an accurate representation of one's personality ($r = .19, p < .05$), and believing that Facebook is an accurate representation of one's offline life ($r = .27, p < .01$). There were no significant relationships between narcissism and feeling connected to friends, feeling it is important that one's profile reflects one's true personality, comparing overall Facebook usage to friends, or caring about Facebook friendships.

Self-Esteem

In regard to general Facebook characteristics and self-esteem, there were small, negative correlations between self-esteem and tagged pictures ($r = -.18, p < .05$) and the number of years participants have had Facebook ($r = -.20, p < .01$). There were no significant relationships between self-esteem and the number of Facebook friends, hours

on Facebook a day, or hours spent reading News Feed a day.

Several significant relationships emerged between self-esteem and the Facebook emotional connection items. For instance, there was a small, negative correlation between self-esteem and participants comparing their overall Facebook usage to friends ($r = -.20$, $p < .01$). In addition, there were small, positive correlations between self-esteem and participants' feeling their offline life is as meaningful as others ($r = .26$, $p < .05$) and participants' feeling their online life is as meaningful as others ($r = .21$, $p < .05$). Furthermore, there were medium, negative correlations between self-esteem and participants feeling worse about their accomplishments when they read about friends' accomplishments ($r = -.41$, $p < .01$) and participants feeling worse about their social life when they read about friends' social lives ($r = -.48$, $p < .01$). There were no significant relationships between self-esteem and feeling connected to friends, feeling connected to the social world, or caring about Facebook friendships.

Table 3
*Correlations Between Facebook Characteristics and Self-Reported Measures of
 Narcissism and Self-Esteem*

Facebook Characteristic	<i>NPI</i>	<i>RSE</i>
1. Number of Facebook Friends	.20**	-.04
2. Number of Profile Pictures	.13	-.04
3. Number of Tagged Pictures	-.04	-.18*
4. Number of Times Update Status	.17*	.04
5. Hours on Facebook a Day	.16*	-.07
6. Hours Spent Updating Profile a Day	.28**	-.12
7. Hours Spent Reading News Feed a Day	.28**	.02
8. Years Have Had Facebook	-.11	-.20**

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

Table 4

Correlations Between Facebook Emotional Connection Items and Self-Reported Measures of Narcissism and Self-Esteem

Facebook Emotional Connection Item	<i>NPI</i>	<i>RSE</i>
1. I need Facebook to feel connected to friends.	.09	-.10
2. I need Facebook to feel connect to the social world.	.16*	-.05
3. I feel it is important to update my status.	.21**	-.12
4. I feel it is important to have many Facebook friends.	.23**	-.08
5. I feel it is important to update my profile picture.	.21**	-.15
6. I feel it is important to share my accomplishments on Facebook.	.21**	-.16*
7. I feel it is important to share my current frustrations on Facebook.	.18*	-.12
8. I feel it is important that my profile reflects my true personality.	.09	-.06
9. I compare my overall Facebook usage to friends.	.08	-.20**
10. I feel that my offline life is as meaningful as others.	.09	.26**
11. I feel that my online life is as meaningful as others.	.22**	.21**
12. When I read about a friend's accomplishments, I feel worse about my accomplishments.	-.04	-.41**
13. When I read about a friend's social life, I feel worse about my social life.	.04	-.48**
14. I wish I had more Facebook friends.	-.03	-.29**
15. I care about my Facebook friendships.	.09	.03
16. My Facebook profile is an accurate representation of my personality.	.19*	.09
17. My Facebook profile is an accurate representation of my offline life.	.27**	.06

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

Factor Analysis

Principal components analysis with oblique rotation was conducted on the 17 selected Facebook emotional connection items. Items that loaded .40 or higher on the first factor were retained. The Cronbach alpha for this factor was .87. Items were summed to create an aggregate Facebook Emotional Connection variable. This variable was established to examine the relationship between the need for social media usage and the interaction between narcissism and self-esteem. Table 5 lists the factor loadings and items included in subsequent bivariate correlation analysis.

Bivariate correlation analysis revealed a significant positive relationship between self-reported measures of narcissism and self-esteem ($r = .21, p < .01$). In addition, self-esteem was negatively related to Facebook Emotional Connection ($r = -.28, p < .01$). There was positive correlation between narcissism and Facebook Emotional Connection, but it did not reach significance ($r = .15, n.s.$). A statistical trend emerged ($p < .10$) although the magnitude of the effect was small.

Table 5

Factor Loadings for the Aggregate Facebook Emotional Connection Variable

Individual Facebook Emotional Connection Variables	Factor Loading
1. I feel it is important to update my profile picture.	.74
2. I feel it is important to share my accomplishments on Facebook.	.74
3. I feel it is important to update my status.	.74
4. I feel it is important to have many Facebook friends.	.73
5. I need Facebook to feel connected to friends.	.73
6. I compare my overall Facebook usage to friends.	.71
7. I need Facebook to feel connect to the social world.	.69
8. I feel it is important to share my current frustrations on Facebook.	.67
9. When I read about a friend's social life, I feel worse about my social life.	.60
10. I wish I had more Facebook friends.	.54
11. When I read about a friend's accomplishments, I feel worse about my accomplishments.	.53
12. I feel it is important that my profile reflects my true personality.	.51

Partial Correlation and Regression

Partial correlation coefficients were computed to control for the effects of impression management. Table 6 presents the results of partial correlation analysis. The same measures remained significant after controlling for impression management.

Regression analysis was conducted to examine how self-reported measures of narcissism, self-esteem, and the interaction between narcissism and self-esteem predicted

Facebook Emotional Connection. Measures of narcissism and self-esteem standardized into z-scores and multiplied together to create the interaction variable (Cohen, Cohen, West, & Aiken, 2003). Facebook Emotional Connection was regressed on the NPI, RSE, and the interaction variable, NPI x RSE.

Table 7 presents the results of regression analysis. The combination of the psychological measures was significantly related to Facebook Emotional Connection, $F(3, 160) = 6.84, p < .01$. The multiple correlation coefficient was .34, indicating that approximately 11% of the variance in Facebook emotional connection in the sample can be accounted for by the combination of the psychological measures. Furthermore, self-esteem explained unique variance in Facebook Emotional Connection after controlling for the effects of the other variables, and narcissism explained unique variance in Facebook Emotional Connection after controlling for the effects of the other variables. The interaction between narcissism and self-esteem was not significantly related to Facebook Emotional Connection.

Table 6

Bivariate and Partial Correlations for Facebook Emotional Connection

	Facebook Emotional Connection	NPI	RSE
Bivariate Correlations			
NPI	.15		
RSE	-.28**	.21**	
IM	-.24**	-.12	.25**
Partial Correlations Controlling for Impression Management			
NPI	.12		
RSE	-.23**	.25**	

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

Table 7

Multiple Regression of Facebook Emotional Connection on Self-Reported Measures of Narcissism and Self-Esteem

Independent Variables	β	t	p
NPI	.21	2.71	.01
RSE	-.32	-4.12	.00
NPI x RSE	-.03	-.44	.66

CHAPTER FOUR

Discussion

This study assessed the relationship between self-reported measures of narcissism, self-esteem, and one's emotional connection to Facebook. Bivariate correlations demonstrated a positive relationship between narcissism and the Facebook emotional connection variable, although it did not reach significance. A statistical trend emerged suggesting that individuals high in narcissism have a greater emotional connection to Facebook. Furthermore, narcissism explained unique variance in Facebook Emotional Connection in subsequent regression analysis. These findings strengthen the notion that narcissists may use Facebook and other social networking sites to transmit their grandiosity, sense of entitlement, and uniqueness. Higher scores on the NPI represented greater attachment to Facebook as a social media tool. Perhaps, individuals high in trait narcissism continue social network usage because it bolsters their self-concept and view of the world.

Bivariate correlations evaluating the relationship between narcissism and general Facebook characteristics also shed some light on how narcissistic behaviors manifest in social networking sites. Similar to previous research, narcissism was positively related to participants' number of Facebook friends and number of times participants update their status (Bergman et al., 2011; Ong et al., 2010). This contributes to the belief that narcissists have an inflated view of self-importance. Krizan and Bushman (2011) conducted a study on social comparison and found that narcissists make more downward social comparisons and experience more superiority. These Facebook friendships may not reflect close interpersonal relationships, but perhaps an audience with which

narcissists can share the ups and downs of their lives (Bergman et al., 2011; Stefanone, Lackaff, & Rosen, 2011). Moreover, although Buffardi and Campbell (2008) and Ryan and Xenos (2011) found positive relationships between narcissism and the photos feature of Facebook, bivariate correlations did not generate any significant relationships with number of profile pictures or number of tagged pictures on Facebook in this study. This discrepancy may be a result of using self-report measures or characteristics inherent in the participant pool sample.

Examining the individual Facebook emotional connection variables, the more narcissistic individuals reported needing Facebook to feel connected to the social world, feeling it is important to update their status and their profile pictures, feeling it is important to have many Facebook friends, and feeling it is important to share their accomplishments and frustrations via Facebook. These significant, positive correlations suggest that Facebook may be an outlet for individuals high in trait narcissism to project their feelings of importance and to have others regard them in the same manner they regard themselves. Zywicki and Danowski (2008) investigated the social enhancement and social compensation hypotheses and found that popular and unpopular individuals attempt to increase their popularity through means of Facebook. In the same manner, narcissists' grandiose sense of self-importance may drive their emotional connection to Facebook. As with all bivariate correlational analysis, directionality remains an issue. Social networking sites may produce narcissistic behaviors by emphasizing self-promoting content such as profile pictures and status updates. Facebook's ability to control how individuals present themselves online may lure narcissists to use social media tools that perpetuate their self-promoting tendencies.

Consistent with the hypothesis on self-esteem, bivariate correlations demonstrated a significant negative relationship between self-esteem and the Facebook emotional connection variable. This suggests that individuals with lower self-esteem have a greater emotional connection to Facebook while individuals with higher self-esteem have less emotional connection to Facebook. Self-esteem also explained unique variance in Facebook Emotional Connection. Perhaps, individuals with lower self-esteem rely on Facebook to garner social support or find social media a better medium to connect with friends or to make new friends (Forest & Wood, 2012). Individuals with higher self-esteem may feel it is easier to capitalize on friendships away from the online environment and do not allow social media to dictate their self-worth or self-concept. They do not possess a greater attachment to social networking tools because they do not gain as many social benefits as low self-esteem individuals do (Steinfeld et al., 2008).

Bivariate correlations between self-esteem and general Facebook characteristics also produced interesting findings. A significant negative relationship between self-esteem and number of years participants have had Facebook emerged such that individuals with low self-esteem have had Facebook longer. Wilson, Fornaiser, and White (2010) found that self-esteem predicted level of social network usage and addictive tendency. It may be possible that individuals with low self-esteem develop an increasing attachment to Facebook with time; with the benefits conferred from Facebook usage, their emotional connection to Facebook inevitably grows. In addition, there were no significant relationships between self-esteem and how many hours participants' spent on Facebook a day, spent updating their profile a day, or spend reading their News Feed a day. Previous studies such as Kalpidou, Costin, and Morris (2011) discovered a negative

association between minutes spent on Facebook and self-esteem. One reason for this inconsistency may lie in the wording of items. This study was examined Facebook activity through hours while previous research investigated Facebook usage in minutes.

Examining the distinct Facebook emotional connection variables, individuals with low self-esteem report feeling it is important to share their accomplishments on Facebook, comparing their overall Facebook usage to friends, feeling worse about their accomplishments when reading about a friend's accomplishments, feeling worse about their social life when reading about a friend's social life, and wishing they had more Facebook friends. In contrast, individuals with high self-esteem feel their online and offline lives are as meaningful as others. Altogether, these significant relationships suggest that individuals with lower self-esteem are more likely to engage in upward social comparison. Their self-worth largely depends on factors external to themselves. Kim and Lee (2011) discovered a positive relationship between the number of Facebook friends and subjective well-being. If individuals with low self-esteem were able to reap more benefits such as gaining more Facebook friends, perhaps they would be able to regard themselves more favorably. Individuals high in self-esteem, on the other hand, are more likely to possess a more stable identity and do not believe their self-worth is contingent on outside sources. Social media, or more specifically, information garnered through Facebook, have the ability to affect well-being and how individuals judge themselves against their peers.

Lastly, regression analysis did not support the hypothesis that narcissism and self-esteem work together to predict greater emotional connection to Facebook. Although there was a significant positive relationship between narcissism and self-esteem, the

interaction between the NPI and RSE itself did not explain unique variance in Facebook Emotional Connection. Higher narcissism and higher self-esteem do not concurrently predict emotional connection to Facebook. There are several explanations for these findings. First, some researchers suggest that high self-esteem is a component of trait narcissism (Baumeister, Campbell, Krueger, & Vohs, 2004; Rosenthal & Hooley, 2010). This illuminates the significant positive correlation between narcissism and self-esteem found in the current study. The NPI was intended to measure non-clinical narcissism in everyday populations. Thus, high self-esteem represents a simple feature of narcissism as a personality construct. Moreover, the research on narcissism and fragile high self-esteem has been mixed. One indicator of fragile high self-esteem is the discrepancy between explicit and implicit self-esteem. Findings have been inconsistent with this component of the theory (Campbell, Bosson, Goheen, Lakey, & Kernis, 2007; Jordan, Spencer, Zanna, Hoshino-Browne, & Correll, 2003). Another aspect of fragile self-esteem is contingent self-esteem in which feelings of worth are centered upon achieving certain goals. Bosson et al. (2008) conducted a meta-analysis on this component of fragile high self-esteem, and results were incongruous. Likewise, self-esteem instability, the last element in fragile high self-esteem, produced conflicting findings as well (Zeigler-Hill, Chadha, & Osterman, 2008; Zeigler-Hill, Clark, & Pickard, 2008). Although narcissism and self-esteem predicted Facebook Emotional Connection independently, the notion that these two constructs may be working in tandem to fuel motivation for Facebook activity was not supported.

More research needs to be conducted to better understand the relationship between narcissism and self-esteem. In one study, Morio and Yamaguchi (2007) found

that dynamism of self-concept mediated the relationship between self-esteem and narcissism. Dynamism of self-concept refers to the variability of self-evaluation in the absence of external stimuli (Morio & Yamaguchi, 2007). Their study found that individuals with higher self-esteem scored higher on the NPI only when dynamism in self-concept was high. When dynamism in self-concept was low, individuals with high self-esteem did not have higher scores in narcissism. This study highlights the possibility that there may be multiple mechanisms affecting the relationship between narcissism and self-esteem. In addition, Sedikides, Rudich, Gregg, Kumashiro, and Rusbult (2004) found that self-esteem mediated the effects of narcissism on psychological health. This included factors such as depression, sadness, loneliness, subjective well-being, couple well-being, anxiety, and neuroticism (Sedikides, Rudich, Gregg, Kumashiro, & Rusbult, 2004). They argue that self-esteem is responsible for the relationship between normal levels of narcissism and psychological well-being. Rosenthal and Hooley (2010) also found similar support for their theory. When evaluating psychological well-being, there needs to be a clear distinction between clinical narcissism and trait narcissism. Although NPI provides insight into understanding narcissism as it pertains to the general population, it may not be a perfect diagnostic tool. The relationship between high self-esteem and high narcissism need to be examined further.

This study had several limitations. First, there are inherent weaknesses in the use of self-report measures. Participants may not respond truthfully. In the current study, we used the Balanced Inventory of Desirable Responding developed by Paulus (1984) to control for impression management and to minimize social desirability bias. Other disadvantages with using self-report measures include imperfect recall or poor memory.

Some of the questions in the Facebook questionnaire required participants to think about their frequency of Facebook usage, and their answers may not reflect actual behavior. Most importantly, answers may fall into a response set such that participants respond to all the questions in the same manner. Second, the use of bivariate correlations has its own shortcomings. Correlation does not imply causation. Conclusions can only be made with respect to the associations between the personality constructs and the different Facebook variables. Another issue with correlational analysis is directionality. For example, narcissism may reflect increased emotional connection to Facebook; however, greater emotional connection to Facebook may also reflect greater narcissism. Self-esteem follows the same logic: low-self esteem may reflect increased emotional connection to Facebook; however, greater emotional connection to Facebook may also reflect lower self-esteem. An unknown third variable may also be producing the effects of this study. Lastly, the participants used in this study do not reflect a random sample. A participant pool was recruited through the Psychology and Neuroscience Department's research participation scheduling website. Thus, participants may share similar characteristics as Baylor University college students. Moreover, the ratio of men to women in this study heavily favored female participants. A more diverse sample of Facebook users not limited to college students may provide more insight into Facebook activity and one's emotional connection to Facebook.

Few studies have examined the interaction between narcissism and self-esteem in relation to social media. One approach for future research may be to employ a diary method. General Facebook characteristics can be garnered from their online profile, but daily measures of self-esteem, narcissism, and feelings related to their Facebook activity

may better illuminate users' emotional connection or psychological well-being associated with their Facebook usage. Another method to examine emotional connection to Facebook may be found through coding specific features of participants' profile pages. Specific features such as status updates or information found in the "About Me" section may reveal overt and covert indications of personality and psychological well-being. Moreover, there have been many debates on the interpretations of scores from the Narcissistic Personality Inventory. Traditionally, the 40-item NPI developed by Raskin and Terry (1988) can be broken down into seven subscales: authority, exhibitionism, superiority, entitlement, exploitativeness, self-sufficiency, and vanity. Brown, Budzek, and Tamborski (2009) argue that characteristics of narcissism tend to fall under two distinct clusters of grandiosity and entitlement. In addition, Rosenthal and Hooley (2010) found a confound between the NPI and self-esteem and argue for a reinterpretation of the relationship between narcissism and psychological well-being. To better understand the relationship between self-esteem and trait narcissism, future analysis should investigate the different subscales of narcissism as it related to self-esteem and emotional connection to Facebook. Lastly, responses from participants should not be limited to college students. Although college students comprise a majority of daily Facebook users, Facebook has expanded to usage by high school students, businesses and corporations, and parents and grandparents alike. The growth of social media and of its diverse users should not be underestimated. Narcissism, self-esteem, and other major psychological constructs provide great insight into the connectedness we feel to social media.

APPENDIX

APPENDIX

Personality and Facebook Questionnaire

INFORMED CONSENT AGREEMENT

Please read this consent agreement carefully before agreeing to participate in this experiment.

Purpose of the experiment: The purpose of this research is to better understand the extent of Facebook usage and the overall function Facebook serves in daily life.

What you will do in this experiment: In this study you will be asked to complete an online survey that includes measures of personality and questions about your activity on Facebook.

Time required: This study will take no more than one hour to complete.

Benefits: For your participation you will receive one research participation credit or extra credit in a psychology class (as determined by the class instructor).

Questions: The principal investigator who designed this study will be happy to answer any questions that you have about your participation in this study. Contact information is listed below under "Contact."

Minimal Risks: Because the survey contains questions about your demographic information, thoughts, and feelings, it is possible (but unlikely) that you may feel uncomfortable answering some of these questions. If you do, simply leave the question blank.

Participation and withdrawal: You must be 18 or older to participate in this study. Your participation in this experiment is completely voluntary. Refusal to participate will involve no penalty or loss of benefits.

Confidentiality: Your participation in this experiment will remain confidential and your identity will not be stored with your data. We will use a code number to link your survey with other responses. Only the principal investigator will have access to your data.

Internet/Web-Survey Disclaimer: As you may be aware, electronic communication may be subject to interception, illegally by another party, while the information is in transit. Therefore, it is possible that your information might be seen by another party and the researchers cannot control whether that happens. Although none of the information requested is of a personal nature, if you are concerned about your data security, please contact the researcher to schedule a time to complete a printed survey with the same questions.

Contact: If you have any questions about this research please contact the principal investigator: Elizabeth Seto, Baylor University, Waco, TX 76798-7334; Elizabeth_Seto@baylor.edu or Dr. Wade C. Rowatt, Associate Professor of Psychology, Department of Psychology & Neuroscience, Baylor University, Waco, TX 76798-7334; 254-710-2961; Wade_Rowatt@baylor.edu.

Whom to contact about your rights in this experiment: If you have any questions about your rights as a participant, or any other aspect of the research as it relates to your participation, please contact Dr. Michael Sherr (Chair, Baylor University Committee for Protection of Human Subjects in Research), School of Social Work, Baylor University, One Bear Place #97320, Waco, TX 76798-7320, (254) 710-4483.

Agreement: I have read and understood this form, am aware of my rights as a participant, have agreed to participate in this research, and am at least 18 years of age. This study consists of an online survey, which you may now participate in. You must complete all sections in one sitting, as you are not allowed to resume at another time from where you left off. By clicking on "I Agree," I agree to participate in this study. (Please print or save a copy of this page for your records.)

- I Agree
- I Disagree

Age (Please enter a numerical value, i.e. If eighteen, type in "18.")

Gender

- Male
- Female

With which racial/ethnic group do you most closely identify?

- African American or Black
- Alaskan Native or American Indian
- Asian
- Caucasian or White
- Hispanic
- Pacific Islander
- Multiracial
- Other

Please type in the last five digits of your Baylor ID.

Where are you completing this survey?

- Home
- Friend's House
- Library
- On-Campus Research Lab
- On-Campus Building
- Public Place (coffee shop, restaurant, etc.)
- Other (please specify) _____

How many other people are currently present while you are completing this survey?

- 0
- 1
- 2
- 3
- 4 or more

What other activities are you engaged in while completing this survey?

- Nothing- only completing this survey
- Watching TV
- Listening to music
- Talking with friends
- Reading something else (besides this survey)
- Eating
- Other (please specify) _____

What browser are you using?

- Internet Explorer
- Mozilla Firefox
- Safari
- Google Chrome
- Other (please specify) _____

Please rate how warm or cold you feel toward yourself (0° coldest feelings, 50° neutral feelings, 100° warmest feelings)

	Very Cold 0°	10°	20°	30°	40°	Neutral 50°	60°	70°	80°	90°	Very Warm 100°
	<input type="radio"/>										

In each of the following pairs of attitudes, choose the one that you MOST AGREE with.

- I have a natural talent for influencing people.
- I am not good at influencing people.

- Modesty doesn't become me.
- I am essentially a modest person.

- I would do almost anything on a dare.
- I tend to be a mostly cautious person.

- When people compliment me, I sometimes get embarrassed.
- I know that I am good because everybody keeps telling me so.

- The thought of ruling the world frightens me.
- If I ruled the world it would be a much better place.

- I can usually talk my way out of anything.
- I try to accept the consequences of my behaviour.

- I prefer to blend into the crowd.
- I like to be the center of attention.

- I will be a success.
- I am not concerned about success.

- I am not better or worse than most people.
- I think I am a special person.

- I am not sure if I would make a good leader.
- I see myself as a good leader.

- I am assertive.
- I wish I were more assertive.

- I like to have authority over other people.
- I don't mind following orders.

- I find it easy to manipulate people.
- I don't like it when I find myself manipulating people.

- I insist upon getting the respect that is due me.
- I usually get the respect I deserve.

- I don't particularly like to show off my body.
- I like to display my body.

- I can read people like a book.
- People are sometimes hard to understand.

- If I feel competent, I am willing to take responsibility for making decisions.
- I like to take responsibility for making decisions.

- I just want to be reasonably happy.
- I want to amount to something in the eyes of the world.

- My body is nothing special.
- I like to look at my body.

- I try not to show off.
- I am apt to show off if I get the chance.

- I always know what I am doing.
- Sometimes I'm not sure what I'm doing.

- I sometimes depend on people to get things done.
- I rarely depend on anyone else to get things done.

- Sometimes I tell good stories.
- Everybody likes to hear my stories.

- I expect a great deal from other people.
- I like to do things for other people.

- I will never be satisfied until I get all that I deserve.
- I take my satisfactions as they come.

- Compliments embarrass me.
- I like to be complimented.

- I have a strong will to power.
- Power for its own sake doesn't interest me.

- I don't care about new fads and fashions.
- I like to start new fads and fashions.

- I like to look at myself in the mirror.
- I am not particularly interested in looking at myself in the mirror.

- I really like to be the center of attention.
- It makes me uncomfortable to be the center of attention.

- I can live my life in any way I want to.
- People can't always live their lives in terms of what they want.

- Being an authority doesn't mean much to me.
- People always seem to recognize my authority.

- I would prefer to be a leader.
- It makes little difference to me if I am the leader or not.

- I am going to be a great person.
- I hope I'm going to be successful.

- People sometimes believe what I tell them.
- I can make anybody believe anything I want them to.

- I am a born leader.
- Leadership is a quality that takes a long time to develop.

- I wish somebody would someday write my biography.
- I don't like people to pry into my life.

- I get upset when people don't notice how I look when I go out in public.
- I don't mind blending into the crowd.

- I am more capable than other people.
- There is a lot I can learn from other people.

- I am much like everyone else.
- I am an extraordinary person.

Below is a list of statements dealing with your general feelings about yourself. Please read each of the following items and report the degree to which you agree or disagree with each statement using the scale provided below.

	Strongly Agree	Agree	Disagree	Strongly Disagree
I feel that I'm a person of worth, at least on an equal plane with others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that I have a number of good qualities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All in all, I am inclined to feel that I am a failure.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to do things as well as most other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel I do not have much to be proud of.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I take a positive attitude toward myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
On the whole, I am satisfied with myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wish I could have more respect for myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I certainly feel useless at times.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At times I think I am no good at all.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Using the scale below, indicate whether the following statements are true or not true about you.

	Not True 1	2	3	Somewhat True 4	5	6	Very True 7
My first impressions of people usually turn out to be right.	<input type="radio"/>						
It would be hard for me to break any of my bad habits.	<input type="radio"/>						
I don't care to know what other people	<input type="radio"/>						

really think of me.							
I have not always been honest with myself.	<input type="radio"/>						
I always know why I like things.	<input type="radio"/>						
When my emotions are aroused, it biases my thinking.	<input type="radio"/>						
Once I've made up my mind, other people can seldom change my opinion.	<input type="radio"/>						
I am not a safe driver when I exceed the speed limit.	<input type="radio"/>						
I am fully in control of my own fate.	<input type="radio"/>						
It's hard for me to shut off a disturbing thought.	<input type="radio"/>						

	Not True 1	2	3	Somewhat True 4	5	6	Very True 7
I never regret my decisions.	<input type="radio"/>						
I sometimes lose out on things because I can't make up my mind soon enough.	<input type="radio"/>						
The reason I vote is because my vote can make a	<input type="radio"/>						

difference.							
My parents were not always fair when they punished me.	<input type="radio"/>						
I am a completely rational person.	<input type="radio"/>						
I rarely appreciate criticism.	<input type="radio"/>						
I am very confident of my judgments.	<input type="radio"/>						
I have sometimes doubted my ability as a lover.	<input type="radio"/>						
It's all right with me if some people happen to dislike me.	<input type="radio"/>						
I don't always know the reasons why I do the things I do.	<input type="radio"/>						

	Not True 1	2	3	Somewhat True 4	5	6	Very True 7
I sometimes tell lies if I have to.	<input type="radio"/>						
I never cover up my mistakes.	<input type="radio"/>						
There have been occasions when I have taken advantage of someone.	<input type="radio"/>						
I never swear.	<input type="radio"/>						

I sometimes try to get even rather than forgive and forget.	<input type="radio"/>						
I always obey laws, even if I'm unlikely to get caught.	<input type="radio"/>						
I have said something bad about a friend behind his or her back.	<input type="radio"/>						
When I hear people talking privately, I avoid listening.	<input type="radio"/>						
I have received too much change from a salesperson without telling him other.	<input type="radio"/>						
I always declare everything at customs.	<input type="radio"/>						

	Not True 1	2	3	Somewhat True 4	5	6	Very True 7
When I was young I sometimes stole things.	<input type="radio"/>						
I have never dropped litter on the street.	<input type="radio"/>						
I sometimes drive faster than the speed limit.	<input type="radio"/>						
I never read sexy books or magazines.	<input type="radio"/>						
I have done	<input type="radio"/>						

things that I don't tell other people about.											
I never take things that don't belong to me.	<input type="radio"/>										
I have taken sick-leave from work or school even though I wasn't really sick.	<input type="radio"/>										
I have never damaged a library book or store merchandise without reporting it.	<input type="radio"/>										
I have some pretty awful habits.	<input type="radio"/>										
I don't gossip about other people's business.	<input type="radio"/>										

Please rate how warm or cold you feel toward yourself (0° coldest feelings, 50° neutral feelings, 100° warmest feelings)

	Very Cold 0°	10°	20°	30°	40°	Neutral 50°	60°	70°	80°	90°	Very Warm 100°
	<input type="radio"/>										

Do you have a Facebook account?

- Yes
- No

Directions: Please read and answer the following questions to the best of your ability. For the most accurate results, please pull up your Facebook profile to answer the next five questions.

How many friends on Facebook do you have? (Please type a numerical value, i.e. If one hundred, type "100.")

How many photo albums on Facebook do you have? (Please type a numerical value, i.e. If one hundred, type "100.")

How many groups are you a part of on Facebook? (Please type a numerical value, i.e. If one hundred, type "100.")

How many profile pictures do you have on Facebook? (Please type a numerical value, i.e. If one hundred, type "100.")

How many pictures are you tagged in on Facebook? (Please type a numerical value, i.e. If one hundred, type "100.")

Directions: Please read and answer the following questions to the best of your ability.

On average, how many times do you log onto Facebook a day?

- 0 - 1 time
- 2 - 3 times
- 4 - 5 times
- 6 or more times

Please use the slider below to indicate, on average, how many hours you are on Facebook a day.
_____ On average, how many hours are you on Facebook a day?

Please use the slider below to indicate, on average, how many hours you spend on Facebook in one sitting.

_____ On average, how many hours do you spend on Facebook in one sitting?

On average, how many times do you update your Facebook status?

- Often
- Sometimes
- Seldom
- Never

On average, how often do you change your profile picture?

- Often
- Sometimes
- Seldom
- Never

On average, how often do you comment on friends' statuses?

- Often

- Sometimes
- Seldom
- Never

On average, how often do you make wall posts?

- Often
- Sometimes
- Seldom
- Never

Please use the slider below to indicate, on average, how many hours you spend updating your profile a day.

_____ On average, how many hours do you spend updating your profile a day?

Please use the slider below to indicate, on average, how many hours you spend reading your News Feed a day.

_____ On average, how many hours do you spend reading your News Feed a day?

Please use the slider below to indicate, on average, how many hours you spend reading your friends' profiles a day.

_____ On average, how many hours do you spend reading your friends' profiles a day?

How many years have you had Facebook? (Please type a numerical value, i.e. If five, type "5.")

--

Will you continue using Facebook in the next year?

- Yes
- No

Will you continue using Facebook in the next 5 years?

- Yes
- No

Is Facebook your preferred mode of communication?

- Yes
- No

Is Facebook your primary mode of communication?

- Yes
- No

Please read each of the following items and report the degree to which you agree or disagree with each statement using the scale provided below.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
I log onto	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Facebook out of boredom.					
I log onto Facebook out of habit.	<input type="radio"/>				
I log onto Facebook for communication.	<input type="radio"/>				
I log onto Facebook to feel connected with others.	<input type="radio"/>				
I find out information about my direct social circle through Facebook.	<input type="radio"/>				
I find out information about others outside my social circle through Facebook.	<input type="radio"/>				
I use Facebook out of convenience.	<input type="radio"/>				
I use Facebook out of necessity.	<input type="radio"/>				
I prefer communicating through Facebook over email.	<input type="radio"/>				
I prefer communicating through Facebook over phone.	<input type="radio"/>				

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
I use Facebook to read what others are doing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I use Facebook to share what I'm doing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I use Facebook to share photos.	<input type="radio"/>				
I use Facebook to share videos.	<input type="radio"/>				
I use Facebook to share links.	<input type="radio"/>				
I use Facebook to look at photos I am tagged in.	<input type="radio"/>				
I use Facebook to look at videos I am tagged in.	<input type="radio"/>				
I use Facebook to chat with friends.	<input type="radio"/>				
I use Facebook to play games.	<input type="radio"/>				
I use Facebook to promote events or social gatherings.	<input type="radio"/>				

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
I use Facebook to learn about events or social gatherings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I use Facebook to make new friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I use Facebook to maintain friendships.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I use Facebook to keep up with current social events.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I use Facebook to keep up with current world events.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
I log onto Facebook every day.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I regularly update my Facebook status.	<input type="radio"/>				
I take pictures, so I can upload them to Facebook.	<input type="radio"/>				
I read my News Feed to see what others are doing.	<input type="radio"/>				
I often make wall posts.	<input type="radio"/>				
I often change my profile picture.	<input type="radio"/>				
I often view friends' profile pictures.	<input type="radio"/>				
I often choose "I am attending" on events.	<input type="radio"/>				
I log onto Facebook during my free time.	<input type="radio"/>				
I log onto Facebook during class.	<input type="radio"/>				
I log onto Facebook during work.	<input type="radio"/>				

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
I make references to Facebook in conversation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook is a part of my daily routine.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I need Facebook to feel connected to friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I need Facebook to	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

feel connected to the social world.					
I cannot imagine life without Facebook.	<input type="radio"/>				
I personally know all my Facebook friends.	<input type="radio"/>				
I like to add new Facebook friends.	<input type="radio"/>				
My profile pictures are typically pictures of me alone.	<input type="radio"/>				
My profile pictures are typically pictures of me with friends or family.	<input type="radio"/>				
My photo albums are typically pictures of me alone.	<input type="radio"/>				
My photo albums are typically pictures of me with friends or family.	<input type="radio"/>				

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
I feel it is important to update my status.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel it is important to have many Facebook friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel it is important to join groups on	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Facebook.					
I feel it is important to update my profile picture.	<input type="radio"/>				
I feel it is important to share links on Facebook.	<input type="radio"/>				
I feel it is important to share my interests on Facebook.	<input type="radio"/>				
I feel it is important to share my accomplishments on Facebook.	<input type="radio"/>				
I feel it is important to share my current frustrations on Facebook.	<input type="radio"/>				
I feel it is important to maintain the overall appearance of my profile.	<input type="radio"/>				
I feel it is important that my profile reflects my true personality.	<input type="radio"/>				
I compare my overall Facebook usage to friends.	<input type="radio"/>				

Please read each of the following items and report the degree to which you agree or disagree with each statement using the scale provided below. The following questions pertain to Facebook status updates.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
I always have something meaningful to share.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I always have something exciting to share.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that my	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

offline life is as meaningful as others.					
I feel that my offline life is as exciting as others.	<input type="radio"/>				
I feel that my online life is as meaningful as others.	<input type="radio"/>				
I feel that my online life is as exciting as others.	<input type="radio"/>				
When I read about a friend's accomplishments, I feel worse about my accomplishments.	<input type="radio"/>				
When I read about a friend's social life, I feel worse about my social life.	<input type="radio"/>				

Please read each of the following items and report the degree to which you agree or disagree with each statement using the scale provided below. The following questions pertain to Facebook photos.

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
When I see friends' photos, I wish my life was more exciting.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I see friends' photos, I wish I had more friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that my offline life is as meaningful as others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that my offline life is as exciting as others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please read each of the following items and report the degree to which you agree or disagree with each statement using the scale provided below.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
I wish I had more friends on Facebook.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I care about my Facebook friendships.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel it is important to have many Facebook friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not compare my overall Facebook activity to others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not compare the number of friends I have to others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not compare the number of photo albums I have to others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not compare my status updates to others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not compare how many groups I am in to others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My Facebook profile is an accurate representation of my personality.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My Facebook profile is an accurate representation of my offline life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please rate how warm or cold you feel toward yourself (0° coldest feelings, 50° neutral feelings, 100° warmest feelings)

	Very Cold 0°	10°	20°	30°	40°	Neutral 50°	60°	70°	80°	90°	Very Warm 100°
	<input type="radio"/>										

In the box provided below, please share your thoughts about this survey and describe any technical difficulties experienced. Be as specific as possible. (Maximum: 500 character limit.)

Thank you for your participation. Again, the purpose of this research is to better understand the extent of Facebook usage and the overall function Facebook serves in daily life. Please keep the nature of this study confidential in order to protect the study's integrity. Your cooperation is greatly appreciated.

If you have any questions about this research, would like to know the results, or would like a copy of the consent form, please contact the principal investigator Elizabeth Seto at Elizabeth_Seto@baylor.edu or Dr. Wade C. Rowatt at Wade_Rowatt@baylor.edu. If any of the questions on this survey caused you discomfort, please contact the researchers listed above. Additionally, you may contact the Baylor Counseling Center at 254-710-2467. Thank you for your time. Please click on the arrow at the bottom of the page to record your responses and ensure completion.

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