Western Kentucky University
TopSCHOLAR®

Masters Theses & Specialist Projects   Graduate School

8-2013

Like or Dislike: The Emotional Toll of Being on Facebook

Lauren N. Weathers
Western Kentucky University, lauren.weathers983@topper.wku.edu

Follow this and additional works at: http://digitalcommons.wku.edu/theses

Part of the Applied Behavior Analysis Commons, Communication Technology and New Media Commons, Multicultural Psychology Commons, Personality and Social Contexts Commons, and the Social Psychology Commons

LIKE OR DISLIKE: THE EMOTIONAL TOLL OF BEING ON FACEBOOK

A Thesis
Presented to
The Faculty of the Department of Psychology
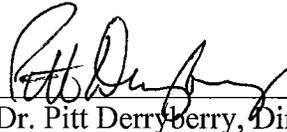Western Kentucky University
Bowling Green, Kentucky

In Partial Fulfillment
Of the Requirements for the Degree of
Masters of Arts

By
Lauren N. Weathers

August 2013

LIKE OR DISLIKE: THE EMOTIONAL TOLL OF BEING ON FACEBOOK

Date Recommended___06/05/2013_____

_____
Dr. Pitt Derryberry, Director of Thesis

_____
Dr. Aaron Wichman

_____
Dr. Andrew Mienaltowski

_____   _8-7-13_____
Dean, Office of Graduate Studies and Research   Date

ACKNOWLEDGMENTS

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIKE OR DISLIKE: THE EMOTIONAL TOLL OF BEING ON FACEBOOK

Lauren N. Weathers   August 2013   Pages 79

Directed By: Pitt Derryberry, Aaron Wichman, Andrew Mienaltowski

Department of Psychology   Western Kentucky University

The current study examined the relationship between affect changes or lack thereof when one logs onto Facebook or Yahoo!. Facebook was specifically chosen for examination in the current study due to its widespread use, its vast effect on society, and its unique features that allow users to obtain information and have social interaction at the same time. Yahoo! served as a control due to the fact that it is a highly popular site that has similar features of Facebook without having the social functions. Both sites allow users to observe news that is pertinent and of interest to them and both are popular; the main difference between the two sites is the social component that Facebook can offer that Yahoo! is unable to offer users. Findings suggest that logging onto Facebook increases positive affect and joy, but this is short lived. After a period of time on the website negative affect and anger increase. Further research needs to be conducted in order to understand what activities on Facebook lead to more or less affect modulation and future studies are discussed.

Introduction

Computer-Mediated Communication and Dependence on Technology

Computer-mediated communication (CMC) can occur via various technologies such as e-mails, texts, chat systems, computers, and other tools to communicate via technology. This form of communication is unlike traditional face-to-face communication, which relies on nonverbal and verbal communication (Tidwell & Walther, 2002). These nonverbal cues can allow the listener to take in not only auditory information, but also social context clues like age and gender (Bordia, 1997). CMC does not use nonverbal cues that can be used during face-to-face communication. As a result, CMC can be seen as a less effective way to communicate in comparison to face-to-face communication due to the fact that the individuals talking may lack social context cues that may make their communication more effective.

In addition, some researchers have found that people self-disclose more information via CMC than they would share in face-to-face interactions (Bonebrake, 2002; Copper & Spotolari, 1997). Self-disclosure on CMC is more accelerated because more personal self-disclosures may occur over a couple of e-mails rather than a couple days or weeks face-to-face (Parks & Floyd, 1996; Wallace 1999). Quantity of exchanges, rather than quality, is increased with CMC interactions due to the fact that, at first, self-disclosures are superficial (Attril & Jalil, 2011). As a result, CMC has become known for having users who self-disclose more frequently and intensely overall. One explanation for this occurrence is the Online Disinhibition Effect (Suler, 2004). Because online, self-boundaries are altered, people may not interact online in real time. For instance, people can chose to hide their identity, users may be able to hide that they are currently on the

sites, and, online, people are more equalized in that there are no face-to-face cues to demographic information. It is not east to tell one's socioeconomic status, race, or gender unless the users choose to self-disclose this information. Thus, some people may feel more open to disclose information online than they would in a face-to-face conversation because certain identity cues can be unknown.

Schiffrin, Edelman, Falkenstern, and Stewart (2010) suggested that Generation Next, people born between 1981 and 1988, use various forms of technology in order to communicate daily. People use CMC to create and maintain relationships. As a result, Schiffrin and colleagues believe there may be no difference between using CMC and face-to-face communication in order to create and strengthen social ties within this generation.

Not only is Generation Next skilled at using CMC, they are also avid users of technology in general. Today, college students are seemingly dependent upon technology both in the United States and internationally. In the spring of 2010, Moeller, Powers, and Roberts (2012) conducted a study with University of Maryland students, which involved the students being unable to use technology such as text messaging and social networking sites. After 24 hours, the students were required to blog about their experiences. On their blogs, many students detailed feeling isolated and having addiction like symptoms of withdrawal due to not being able to use technology they use on a daily basis. Moeller later teamed up with researchers (2012) around the world to see if the same negative effects were seen in other cultures. Researchers from Argentina, Chile, China, Lebanon, Mexico, Slovakia, Uganda, and the United Kingdom had samples of college students be without technology for 24 hours and they found similar results. Thus, no matter the level

of development of the country, many of the college students utilized in the study had similar experiences of missing the technology and feeling isolated.

This dependence on technology is important to note because it shows that young adults rely on technology to fulfill certain motivations. One participant from Moeller's University of Maryland sample even stated "After a while I missed holding my cell phone so much that I actually left my battery in my bag and held my phone in my hand. It is almost like a comfort to hold and just know it was there." Thus, Moeller's study seemingly implies that a consequence of human reliance on increasing technologies is that it has led to some form of gratification or satisfaction that interaction with it achieves. This seems more evident if one examines products of technological advances such as social networking websites.

Social Networking Sites and Facebook

One of the technologies frequently used today, which also caused some students in Moeller's studies to feel isolated and sad to be without, are social networking sites. A social networking site is an Internet site where people communicate in various ways (Boyd & Ellison, 2007) such as chat systems, updates, messages, wall posts and other means. Today, social networking sites like Facebook and Twitter are very popular with 70% of adolescents using social media sites, most commonly Facebook (Jelenchick, Eickhoff, & Moreno, 2012). Forty six percent of Americans use social networking sites (Lenhart, 2009). College students spend an average of 28 minutes daily on Facebook (Pempek, Yermolayeva, & Calvert, 2009). Social networking sites are not only popular, but are affecting culture to the extent that Aleman and Wartman (2009) noted that "social

networking sites are now fundamental to the culture of the campus and student life" (p. 3).

Given the popularity and ubiquity of social networking sites, and Facebook, in particular, researchers have begun to study these sites as a medium or context for human behavior. Some researchers have explored reasons as to why these sites are used. Stern (2004) found that people who use social networking websites want an audience, and various people self-disclose intimate details at different levels on these sites in order to obtain this audience. Most college students who use social networking sites frequently use these sites to make new friends and locate old friends (Raacke & Bonds-Raacke, 2008).

Also, traditional college age students use these sites to receive social support because well-being is associated with positive feedback from friends on social networking sites (Valkenburg, Peter, & Schouten, 2006) and overall Facebook users are less socially lonely (Ryan & Xenos, 2011). Support from friends is another function of Facebook, and Facebook friends can provide support to those who disclose they need support as long as the disclosure is an honest self-presentation (Greene, Derlega, & Mathews, 2006). Recently, Weathers (2012) identified differing motivations among college students for using Facebook. Overall, support seeking behavior was a predictor of self-disclosure behavior in two kinds of university samples (one small liberal arts university and the other a large public regional comprehensive university) and narcissism was not predictive of Facebook self-disclosure. Thus, there may be some positive functions and/or gratifications to using Facebook.

Due to Facebook's unique friendship connectivity component and ability for users to obtain social support, it is not surprising that Ellison, Steinfeld, and Lampe (2007) found that Facebook is associated with social capital because it allows users to keep in contact with other users even after significant life changes. The construct of social capital was defined by Bourdieu and Wacquant (1992) to include both offline and offline interactions as "the sum of the resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition" (p. 14). It is important to note, that social capital between a person and their friends or social connections is directly related to positive outcomes like self-esteem, life satisfaction, and well-being (Bargh & McKenna, 2004; Helliwell & Putnam, 2004). However, general Internet use was not related to social capital; social capital was only related to certain Internet sites such as Facebook, which is social connectedness oriented.

Other research about Facebook use has addressed the nature of those who use Facebook. Specifically, that Facebook activity is related to one's ability to modulate self-enhancement in order to compensate for what he or she lacks offline or be consistent with their offline popularity. A noted example in this area is from Zywica and Danowski (2008), who found that there are two kinds of Facebook users: social compensators and social enhancers. The researchers came to this conclusion by examining how offline popularity and popularity on Facebook was related to self-esteem and sociability. Social compensators are more introverted and have lower self-esteem and popularity and compensate for what they lack offline. Conversely, social enhancers use social networking sites as another way to socialize. Offline, enhancers are extroverts with high

self-esteem and are popular in real life. Social enhancers use the sites to further their gregariousness and popularity online.

Facebook users are also more narcissistic, as various studies have supported. In general, narcissists use relationships to make themselves appear more popular, successful, higher in status, and skilled at initiating relationships (Morf & Rhodewalt, 2001). Social networking sites like Facebook allow narcissists to act on these behaviors. Typically, people with higher narcissism levels and lower self-esteem have greater online activity and spend this time creating self-promotional content (Mehdizadeh, 2010). Sites like Facebook also give narcissists the gratification of self-promotion and the ability to practice superficial behavior (Ryan & Xenos, 2011). According to Buffardi and Campbell (2008), narcissism levels are related to high levels of social activity on Facebook and more self-promoting behavior. The researchers also found that strangers are able to examine a narcissist's Facebook wall and correctly identify them as being narcissistic.

Researchers have also associated social networking website use to certain deficits in social functioning. For example, Twenge, Konrath, Foster, Campbell, and Bushman (2008) cited social networking website overuse as a reason for increases in narcissism. Thoma and Bebeau (2008) made similar claims about social networking websites in explaining decreases observed in moral judgment development. Though these studies did not directly address the effects of social networking website usage, they have served as reminders of the potential negative consequences associated with overreliance of social networking websites.

As noted, the social networking site addressed in the current study is Facebook. Facebook was launched in 2004 and initially only served Harvard students (Boyd &

Ellison, 2007). As the popularity of Facebook increased, other colleges and universities and eventually high schools and corporations began using the site. Today, there are over a billion monthly active users of Facebook (https://www.facebook.com/facebook). Research on social networking websites in general, and Facebook in particular, has generated considerable implications. It seems that such research is limited in that it has yet to address what it is that is so appealing about social networking websites such as Facebook. Why is it that so many have been compelled to use it? What is it about Facebook that has made it such an omnipresent part of the everyday lives of humans? Clearly, Facebook is used by an ever-growing number of people, and it is being used for a number of reasons. But what is it that makes Facebook so appealing to users? Questions like these serve as the impetus for and focus of the current study.

In proposing the current study, it is argued that the reason for Facebook's popularity and ever increasing usage is because its usage improves mood. Essentially, spending time on Facebook serves as a mood induction because doing so induces positive feelings and arousal. Though Facebook is a technology that remains somewhat novel, it is fundamentally a social medium. As a result, Facebook has the capacity to elicit positive feelings and arousal in a way that other technologies, particularly websites, cannot. In supporting such claims, it is important to address research pertaining to affective arousal.

Affect

Affect is a subjective experience at a specific point in time that can be positive or negative in nature (Wyer, Clore, & Isbell, 1999). Affect is conceptually evaluated by valence and activation dimensions; thus affect can range between positive and negative

7

and may be high or low. Positive affect (PA) involves a person feeling emotions like enthusiasm, alertness, and active (e.g. full of energy and concentration; Watson, Clark, Mclntyre, & Hamaker, 1992). In contrast, negative affect (NA) involves a person feeling emotions like anger, contempt, disgust, guilt, fear, and nervousness. Emotions such as joy, love, and contentment are associated with positive affect, which is a contrast to negative affect, which is associated with feelings of fear, anger, and sadness (Russell & Caroll, 1999).

Social activity in the past has been associated with PA (Berry & Henson, 1996). However, depending on the type of social activity, positive and negative affect may occur. More specifically, if a social interaction is fun/active and necessary/informational, than those in the social interaction are more likely to experience PA (Vittengl & Holt, 1998). However, social interactions that involve receiving help/support and arguing/confronting behavior are associated with NA. However, social interaction has a bidirectional relationship to positive affect. As stated above, social interaction can lead to positive affect, but positive affect can lead to increased social activity (Cunningham, 1988).

Although affect modulation using Facebook and other social networking sites has not been conducted experimentally, some correlational studies have examined enjoyment or positive outcomes that perpetuate social network use. Moon and Kim (2001) discovered that enjoyment, the pleasure someone experiences due to a behavior or conducting an activity, is a factor for why Internet users use the Internet. Social networking sites in particular have been considered by many researchers (Kang & Lee, 2010; Sledgianowski & Kulviwat, 2009) to be a pleasure-oriented information system

where people are more motivated to use these sites if they perceive they are obtaining enjoyment from using the sites. Overall, social network site users use social networking sites for utility and enjoyment (Kim, Chan, & Gupta, 2007; Lin & Bhattacherjee, 2008; Lu & Su, 2009; Moon & Kim, 2001; Teo, Lim, & Lai, 1999; van der Heijden, 2004). Lin and Lu (2011) discovered that the biggest variable related to continued social networking site use was enjoyment although perceived usefulness and network externalities like number of peers and members and perceived complementarity was also highly related to social networking site use. Even though researchers have found that enjoyment motivates and perpetuates Internet and social networking site use, researchers have not examined if one of the pleasures derived from these pleasure-oriented information systems is affect modulation.

Overall, little research on affect and Facebook has been conducted. Emotion modulations due to simply logging on to Facebook have not been studied, but other emotional modulation patterns on Facebook have been investigated. For instance, Bevan, Pfyl, and Barclay (2012) found that rumination and negative emotion are positively correlated with being unfriended by a close friend and positively predicted Facebook intensity of use. Consequently, Facebook intensity has been positively related to jealousy (Muise, Christofides, & Desmarais, 2009).

However, not all affect research on Facebook has been negative. Wise, Alhabash, and Park (2010) found that social searching was more pleasant than just browsing Facebook, showing that there are some positive emotions associated with Facebook use. Social searching (Lampe, Ellison, & Steinfield, 2006) involves the Facebook user looking for information about another person in order to get to know that person. Given that

Lampe, Ellison, and Steinfield and Raacke and Bonds-Raacke (2008) found that Facebook users use the site to make friendships or maintain friendships, it would make sense that social searching elicits more positive affect in participants using the site because the site was created for social interaction purposes. Because creating and maintaining friendships was the intention behind the creation of Facebook, it would make sense that logging onto Facebook elicits gratifications; even though Bevan, Pfyl, and Barclay (2012) demonstrated that negative emotions can occur on this website under specific circumstances.

The Present Study

The present study addressed whether Facebook usage was linked to individual affective states. Thus, Facebook was treated as a social activity mood inductor. Because the website involves social interaction (Ellison, Steinfeld, & Lampe, 2007; Raacke & Bonds-Raacke, 2008), the website should elicit affect modulations like other social activity mood inductors. It has been supported that the Velten Mood Induction for elation is significantly related to the mood benefits associated with social and pro-social activities (Cunnignham, 1988), because positive affect and social interaction is bidirectional, the act of going on Facebook may be similar to the elation Velten Mood Induction, but in an opposite fashion. The social behavior of being on Facebook should cause participants to witness positive affect.

This study also considered what changes in affective states occurred among those spending time on Facebook compared to those who spent time on Yahoo!, which has been ranked as the fourth most popular website (http://mostpopularwebsites.net/) behind Facebook, Twitter, and YouTube. Furthermore, Yahoo! shares many features similar to

Facebook in that they both can deliver similar information, but in different forms. The primary difference is that Yahoo! does not have a social component.

It should be noted that there are a number of factors that could have something to do with the affective experience of an individual while on Facebook or Yahoo!. The first category of constructs considered included need for cognition, self-esteem, narcissism, depression level, and personality traits.

Need for cognition refers to one's tendency to engage in and enjoy effortful thinking (Cacioppo & Petty, 1982). This construct was important to consider because those with a high need for cognition might be more inclined to enjoy the mental stimulation that both sites seemingly facilitate. Participant self-esteem was regarded as a possible covariate as Zywica and Danowski (2008) found that individuals with low self-esteem and high self-esteem strive more to look popular on Facebook. As such, it was possible that those with low or high self-esteem may be more likely to experience an improved affective state while on Facebook – especially if their experience while on Facebook positively impacted their perceived popularity.

Narcissism was another relevant variable because research supports that Facebook users tend to be more narcissistic (Buffardi & Campbell, 2008; Mehdizadeh, 2010; Ryan & Xenos, 2011; Vazire & Gosling, 2004). Due to the fact that Facebook users are typically more narcissistic, it will be interesting to see how narcissism could contribute to amount of Facebook use and increases or decreases in positive and negative affect and discrete emotions.

Depression level was an important consideration because it has been supported that those with higher levels of depression also have high support seeking behavior

(Wittman & Mienaltowksi, 2010). Those with less social support have quality of life issues like depression (George, Blazer, Hughes, Fowler, 1989; Prince, Harwood, Blizard, Thomas, & Mann, 1997). Thus, stronger changes in affective states may occur for those participants with high depression levels who log onto Facebook to receive support versus those who do not receive support.

Where personality traits were concerned, it was important to understand variations of personality among the participants because Facebook use differs between personality types (Ryan & Xenos, 2011). For instance, Ryan and Xenos supported that extroverts, narcissists, and those with feelings of family loneliness are more likely to be Facebook users. In contrast, Facebook nonusers are more likely to be conscientious, socially lonely, and shy.

The second category of constructs considered had to do with individual reasons for and attitudes about using technology, in general, and Facebook specifically. If one likes to use technology and Facebook, they may have more positive affect from using the site as compared to those who do not use Facebook. Likewise, Zywica and Danowski's (2008) conception of Facebook use for social compensation versus social enhancement was an important consideration. If participants were social compensators or social enhancers and conducted activities on Facebook that parallel these designations, it seemed plausible that their affective states could be more positively impacted. Saculla (2010) identified certain constructs pertaining to attitudes about technology and Facebook use that were also considered. These included isolation, exhibitionism, and communication mode where attitudes about technology reliance in general are concerned along with popularity, self-promotion and interpersonal communication where Facebook

is concerned. Although it was uncertain how such reasons for technology and Facebook use might relate to one's affective experiences while engaged with either, it was conceivable that those high in any one of these constructs could achieve either increased or decreased affective changes.

Therefore, the current study accounted for two different categories of constructs that could potentially confound findings. It should also be stressed that these constructs were not regarded simply as potential covariates. Because study of Facebook use is a burgeoning area, it was hoped that accounting for these constructs would help generate additional understanding about the profiles of Facebook users.

Hypotheses

It was hypothesized that increased affective arousal would be observed among those who spent time on Facebook. Furthermore, such increases would remain after controlling for any of the aforementioned variables where significant relationships with affective states were observed.

It was also hypothesized that increases in affective arousal would not be observed among those spending time on Yahoo! Thus, those who spent time on Facebook would experience greater increases in affective arousal than those who spent time on Yahoo! These hypotheses were warranted due to the fact that social activity was linked to positive affect (Berry & Hansen, 1996). Because Facebook is a social media site that elicits a number of forms of social interactions, it is thus a form of social activity. Hence, it should elicit positive affect in observers as opposed to Yahoo!, which – though popular – lacks this social activity component. Furthermore, because social network site users receive enjoyment from using the sites (Lin & Lu, 2011), more positive affect should be

generated by Facebook because it is a social network site as compared to Yahoo! which is not. Thus, an increase in positive affect and joy will be observed among those spending time on Facebook and a decrease in negative affect, anger, and sadness will be observed among those spending time on Facebook and this will remain after controlling for relevant variables. Secondly, an increase in positive affect and joy will not be observed among those spending time on Yahoo! and a decrease in negative affect, anger, and sadness will not be observed among those spending time on Yahoo! because Yahoo! is not expected to impact affect. Thirdly, Those who spend time on Facebook will have greater increases in positive affect and joy than will those who spend time on Yahoo!, which is not expected to impact affect, and those who spend time on Facebook will have greater decreases in negative affect, anger, and sadness than will those who spend time on Yahoo!.

Methodology

Participants and Design

Participants were recruited through a large public regional comprehensive university Department of Psychology research pool. The research pool is primarily comprised of students taking an introduction to psychology course. Participants were randomly assigned to one of two conditions. In order to randomly assign participants, the researchers created time slots on Study Board and used a random generator website (*Random.org-true random number*, 2012) to decide which time slots received what condition. In all, 89 participants were recruited. Forty four people were in the Facebook condition and 45 people were in the Yahoo! condition. The participants had a mean age of 20.17 *(SD* = 2.59). Fifty eight percent of the participants were female, 35% were male,

and 7% did not identify their gender. In terms of ethnicity, 2% were Asian, 10% were African American, 75% were Caucasian, 2% were Hispanic/Latino, 5% were other, and 6% did not identify their ethnicity.

The experiment was a pre-post two groups design; five 2 (group) x 3 (time) repeated measures MANOVA's were conducted and correlations of pre-lab measures and reports of affective states were used to identify covariates.

Materials

Short Form of the Need for Cognition Scale. (Cacioppo, Petty, & Kao, 1984) The Need for Cognition Scale contains 18 items and examines how interested one is in effortful processing of information (See Appendix A). Participants use a nine point scale to indicate how they disagree or agree with each item. The nine point scale ranges from +4 (*very strongly agree*) to -4 (*very strongly disagree*). The highest score one can get is a 72 and the lowest score possible is -72. Higher scores represent people who pursue and enjoy the act of thinking, whereas lower scores represent people who do not pursue or enjoy the act of thinking. Originally, the scale contained 34 items (Cacioppo & Petty, 1982), but 18 of the items had the highest factor loading and so the 16 items that did not have the highest factor loadings were taken out to create a short form (Cacioppo, Petty, & Kao, 1984). The reduced Need for Cognition Scale was positively correlated with the original 34-item scale ($r = .95$, $p < .001$) and had a high internal consistency with a Cronbach's alpha of .90. A more recent Cronbach's alpha for the 18-item Need for Cognition Scale was .83 by Venkatraman, Marlino, Kardes, and Sklar (1990). The Need for Cognition Scale negatively relates to scores on the Social Identity Orientation (high scores represent importance of social values like attractiveness or popularity to one's

identity; Cheek, 1983), *r* = -.28, *p* < .01 (Berzonsky & Sullivan, 1992) and was positively correlated with Uncertainty Orientation (high scores represent the desire to gain and maximize information; Sorrentino, Short, & Raynor, 1984), *r* = .20, *p* < .002 (Sorrentino, Bobocel, Gitta, Olson, & Hewitt, 1988). For the current sample, the Cronbach's alpha was .88.

Narcissism. The Narcissism Personality Inventory (Raskin & Terry, 1988) indexes narcissism. The Narcissistic Personality Inventory (NPI) includes 40 items and was used to assess the narcissism levels of the participants (See Appendix B). For each item, participants must choose which answer best matches themselves from two answer choices. The lowest score one can receive is zero and the highest is 40. A more recent Cronbach's alpha for the NPI composite score was .73 (Buffardi & Campbell, 2008). In order to assess validity, Raskin and Terry (2008) correlated the NPI with the Interpersonal Check List, a 128 adjective and adjective phrase list that describes self and others. For the current sample, the Cronbach's alpha was .87.

Electronic Media and Communication Scale (EMCD). The forty-seven items and six indices used from EMCD (Saculla & Derryberry, 2011) were used to measure electronic and Facebook beliefs and uses (See Appendix C). The items asked generic questions about duration and type of use and also asked participants to assess their Facebook use using a five point Likert scale where 1 is *strongly agree* and 5 is *strongly disagree*. The intact EMCD examines Facebook, MySpace Twitter, MP3 player use, and cell phones. Due to the fact that only Facebook was being studied, only questions that related to Facebook subjective and objective use were retained. Thus, the factors of how much one uses and relies on Facebook, Facebook as a vehicle for popularity, Facebook

self-promotion, and Facebook interpersonal communication were used. During its creation, three rounds of factor analyses were conducted for the complete scale. The first two factor analyses were conducted with a pilot study. During the first factor analysis, 45 items were retained, and, during the second, two items were removed because the items had issues with cross loading and failed to exceed a factor loading greater than .40. The factor of Facebook/MySpace as a vehicle for popularity had a Cronbach's alpha of .90, the Facebook/MySpace self-promotion factor had a Cronbach's alpha of .86, Facebook interpersonal communication had a Cronbach's alpha of .81, and Facebook/MySpace and texting exhibitionism had a Cronbach's alpha of .73. For the current study, the factor of Facebook/MySpace as a vehicle for popularity had a Cronbach's alpha of .85, the Facebook/MySpace self-promotion factor has a Cronbach's alpha of .79, and Facebook interpersonal communication had a Cronbach's alpha of .66. The Cronbach's alpha for Facebook/MySpace and texting exhibitionism was not computed for the current study because only one item in particular could be used for this study as only Facebook behavior was being examined.

Rosenberg Self-Esteem. This ten-item questionnaire (Rosenberg, 1965) measured self-esteem levels in participants (See Appendix D). Participants answered the survey using a four point Likert scale from 1 (*strongly agree)* and 4 (*strongly disagree).* The scores could range from zero to 30 where high scores represent high self-esteem and low scores represent low self-esteem. Several studies have been conducted on the internal consistency of the Rosenberg Self-Esteem Scale. Dobson, Goudy, Keith, and Powers (1979) obtained a Cronbach's alpha of .77 and Fleming and Courtney (1984) obtained .88. Silber and Tippett (1965) found a test-retest correlation of .85 while Fleming and

Courtney (1984) found a correlation of .82. In terms of validity, the scale has had

convergent validity with confidence (*r* = .65) and popularity (*r* = .39) (Lorr &

Wunderlich, 1986). It has also correlated with the Lerner Self-Esteem Scale (*r* = .72)

(Savin-Williams, & Jaquish, 1981). For the current sample, the Cronbach alpha was .70.

Center for Epidemiological Studies Depression Scale (CES-D). This 21 items

inventory was used to assess depression levels in participants (Radloff, 1977; See

Appendix E). The 20 item questionnaire asked participants to rate how they felt over the

course of the past week. Participants chose between rarely or none of the time, some or a

little of the time, occasionally or a moderate amount of time, or most or all of the time.

Scores can range from zero to 60, where 60 represents more depression symptoms and

zero is the absence of depression symptoms. For the general population, internal

consistency is .85 and for the patient sample .90. Construct validity tests were not

conducted by Randloff, but it was assumed that because the symptoms are either

characteristics of depression or not, it should have validity. For the current sample, the

Cronbach alpha was .91.

Facebook Social Compensator and Enhancer Questionnaire. This

questionnaire by Zywica and Danowski (2008) contains 43 items and categorically

indicates whether or not the participants are social compensators, social enhancers, or

neither (See Appendix F). The questionnaire asked participants how popular they

perceive themselves online and offline, how satisfied they are with themselves, how

social they are, and basic information about their Facebook use. The questionnaire

included open ended and Likert scale items. The offline popularity subset had a

Cronbach's alpha of .80 and the Facebook popularity subset had a Cronbach's alpha of

.78. In order to assess whether a participant was an introvert or extrovert, Zarkin's (1983) sociability scale was used. The Cronbach's alpha for sociability was .82. In order to assess self-esteem, the researchers used the Rosenberg Self-Esteem Scale (Rosenberg, 1965). Social enhancers were put together by scoring high on sociability and high on offline popularity, whereas compensators scored low on sociability and low on offline popularity. In the current study, 18 participants were identified as social enhancers and 26 were identified to be social compensators. For the current sample, the Cronbach's alpha for offline popularity was .71 and the Cronbach's alpha for Facebook popularity was .42.

Ten Item Personality Inventory. Participants filled out a ten-item inventory about their personality (Gosling, Rentfrow, & Swann, 2003; See Appendix G). Each item was answered using a seven point Likert scale where *1* was *disagree strongly* and *7* was *agree strongly*. The scale contained five subsets, which were measured using two items per subset. The five subsets were extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience. Higher scores represented higher levels of the subsets whereas lower scores represent lower levels of the subsets. Test-restest reliability for this instrument had a mean of $r = .80$. Furthermore, the Ten Item Personality Inventory was positively related to the correlated with the Big-Five Inventory, with the extraversion ($r = .87$, $p < .01$), agreeableness ($r = .70$, $p < .01$), conscientiousness ($r = .75$, $p < .01$), emotional stability ($r = .81$, $p < .01$), and openness to experience ($r = .65$, $p < .01$). For the current sample, the Cronbach alpha was .69.

Neutral Affect Induction. The Neutral Affect Induction was used to make the participants neutral in affect (Gross & Levenson, 1995). The induction involves the participants viewing a screen saver of abstract shapes (i.e., Screenpeace screensaver) for

two minutes. Due to the fact that the researchers are trying to observe fluctuations in affect due to logging onto Facebook or Yahoo!, it is important that participants start off neutral in affect to observe affect fluctuations that are due to the manipulation and not other variables that are beyond the researchers' control.

Positive and Negative Affect Schedule (PANAS). The PANAS is a 20 item questionnaire that uses a 5-point scale ranging from 1 (*very slightly or not at all)* to 5 (*extremely)* to indicate the extent to which the respondent has felt a particular way in the indicated time frame (Watson, Clark, & Tellegen, 1988; See Appendix H). For this experiment, the PANAS was used as a pre and post measure to ensure that the participants' moods were neutral before the manipulation and to see if post-manipulation affect changed. Internal consistencies in a non-clinical sample for the PANAS was a Cronbach's alpha of .89 for PA scale and for the NA scale a Cronbach's alpha of .85 (Crawford & Henry, 2004). To assess validity, Crawford and Henry correlated the PA and NA scales with the Depression Anxiety and Stress Scale depression (PA: $r = -.48$; NA: $r = .60$), Hospital Anxiety and Depression Scale depression (PA: $r = -.52$; NA: $r = .44$), Depression Anxiety and Stress Scale anxiety (PA: $r = -.30$; NA: $r = .60$), Hospital Anxiety and Depression Scale anxiety (PA: $r = -.31$; NA: $r = .65$, and DASS stress (PA: $r = -.31$; NA: $r = .67$). For the current sample, the Cronbach alpha for positive affect at time 1 was .92, for time 2 was .86, for time 3 was .89. For the current sample, the Cronbach's alpha for negative affect at time 1 was .72, for time 2 was .84, and for time 3 was .83.

Emotion Questionnaire. The emotion questionnaire is a six-item questionnaire that would allow researchers to observe participants' levels of love, joy, surprise, anger,

sadness, and fear. In the U.S., the emotions categorized in this emotion questionnaire are related to everyday feelings (Shaver, Schwartz, Kirson, & O'Connor, 1987; See Appendix I). The emotion questionnaire was used three times to examine the participants' emotions pre manipulation, right after starting the manipulation, and post manipulation to see if the manipulation affected their emotions. The emotion questionnaire was used in conjunction with the PANAS in order to capture discrete emotions not reflected by the PANAS.

Other measures*. An informed consent document was also used in order for participants to consent to being a part of the study and for them to know what the study would entail (See Appendix J). A survey about what the users did on Facebook or Yahoo! was also used (See Appendix K). Demographics questions were also asked in order to obtain background information about the participants (See Appendix L) was also used.

Procedures

Before entering the lab, the participants filled out a survey that contained seven questionnaires and 177 items. This survey was online via Qualtrics for students to access. These pre-lab measures included the Need for Cognition Scale (Cacioppo & Petty, 1982), Narcissism Personality Inventory (Raskin & Terry, 1988), Ten Item Personality Inventory (Gosling, Rentfrow, & Swann, 2003), seven indices from the Electronic Media and Communication Scale (Saculla & Derryberry, 2011), the Rosenberg Self-Esteem (Rosenberg, 1965), Depression Inventory II, and the Social Compensator and Enhancer questionnaire (Zywica & Danowski, 2008). Before the participants entered the lab, they had already been randomly assigned to one of the two conditions.

Before the manipulation occurred, participants were told that they would be assigned to go onto a specific website and to keep in mind what they did on this website

because they would answer questions about their activity on this website later. The experimental condition involved observers logging onto their Facebook accounts. Those in the Facebook condition had to have a Facebook account. The control condition instead went to Yahoo!. Yahoo! served as the control group due to the fact that it is one of the most popular websites after Facebook, Twitter, and YouTube (http://mostpopularwebsites.net/) and has certain commonalities of Facebook. Yahoo! mostly differs from Facebook in that it lacks the amount of social interaction Facebook can provide its users.

When participants entered the lab, they completed a neutral affect induction in order to ensure that preexisting mood states did not confound results. The participants then completed the PANAS and an emotion questionnaire to ensure their mood was relatively neutral (i.e., not elevated) and to serve as a pre-measure. The participants then logged onto Facebook or Yahoo!. One minute after logging on, the participants filled out the PANAS and the emotion questionnaire for the second time, but this time counterbalanced. Participants were then allowed to be on Facebook or Yahoo! for as short of time as they wished, but for no longer than 28 minutes, as research supports that college students are typically on Facebook for 28 minutes a day (Pempek, Yermolayeva, & Calvert, 2009). Once participants decided to log off of Facebook or Yahoo!, they completed the PANAS and emotion questionnaire for a third time that was again counterbalanced. The participants then answered a questionnaire about their activity on the website they visited. The participants concluded their involvement by completing a demographics questionnaire (See Appendix K).

Results

The principal analyses were 2 x 3 repeated measures multivariate analyses of variance (MANOVA). One MANOVA was conducted for each of the three discrete emotions and each index of positive and negative affect, resulting in five separate 2 x 3 MANOVA's. Following each MANOVA, additional analyses were performed in order to account for simple effects between groups on each reported instance of affect (i.e., independent samples t-tests) and differences of affective reports within each group (i.e., repeated measures MANOVA for each condition individually). In some instances, reported affect at time 1, time 2, or time 3 had statistically significant correlations with constructs having to do with personal and social functioning or with constructs pertaining to individual reasons for and attitudes about using technology and Facebook. In such instances, the primary analyses were conducted again with the significant variable included as a covariate. However, due to significant differences in time 1 for some affect and emotions, 2 x 2 repeated measures multivariate analysis of covariance (MANCOVA) was conducted instead.

Discrete emotions

Descriptive statistics for the discrete emotions of joy, anger, and sadness can be found in Table 1.

Joy. Figure 1 illustrates the trends observed for joy where reported joy peaks at time 2 and then drops at time 3 in the Facebook condition; in the Yahoo! condition joy shows a steady decrease (see Table 1 for descriptive statistics). The 2 x 3 repeated measures MANOVA reported significant changes in joy (F [2, 170] = 15.779, $p < .001$, $\eta^2 = .16$) across groups. A significant condition by time interaction was also found (F [2,

170] $= 8.506$, $p < .001$, $\eta^2 = .09$). Statistical significance was found between the Facebook and Yahoo! conditions (F [1, 85] $= 6.060$, $p < .05$, $\eta^2 = .07$).

Independent samples t-test revealed significant differences in joy at time 3 ($p < .001$, $r^2 = .24$). No significance was observed between groups on joy for times 1 and 2.

Table 1: *Descriptive statistics for discrete emotions*

	Joy			Anger			Sadness		
	T1	*T2*	*T3*	*T1*	*T2*	*T3*	*T1*	*T2*	*T3*
F	2.39	2.65	1.43	2.45	1.16	2.86	2.61	1.32	1.12
	(1.32)	(1.19)	(.73)	(1.13)	(.48)	(1.27)	(1.43)	(.64)	(.39)
Y	2.84	2.56	2.47	1.27	1.38	1.30	1.36	1.42	1.64
	(1.06)	(1.18)	(1.20)	(.65)	(.72)	(.70)	(.77)	(.87)	(.86)
T	2.61	2.60	1.96	1.85	1.27	2.08	1.98	1.37	1.39
	(1.21)	(1.18)	(1.08)	(1.09)	(.62)	(1.29)	(1.31)	(.76)	(.72)

Note: F = Facebook condition, Y = Yahoo! condition, T = Total; Number in parenthesis = standard deviation. N = 43 in Facebook condition; N = 44 in Yahoo condition.

Separate repeated measures MANOVA's were conducted in order to assess changes in joy within each condition. For the Facebook condition, significant changes in joy were observed (F [2, 84] $= 15.181$, $p < .001$, $\eta^2 = .27$). Bonferroni pairwise comparisons affirm that these differences are largely due to differences in reported joy at time 3, which is significantly lower than that reported at time 1 ($p < .001$) and time 2 ($p < .001$). For the Yahoo! condition, significant changes in joy were also observed (F [2, 86] $= 4.300$, $p < .05$, $\eta^2 = .09$). Bonferroni pairwise comparisons did not reveal statistical significance in joy among any of the three conditions.

Figure 1: *Reported joy in times 1 – 3 for Facebook and Yahoo! conditions*
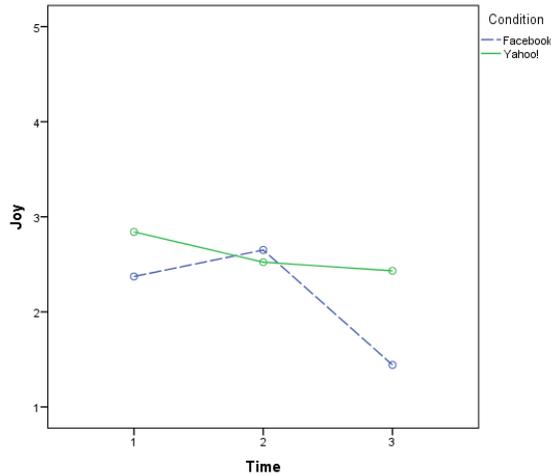
Anger. Figure 2 illustrates the trends observed for anger where reported anger

declines at time 2 and increases at time 3 in the Facebook condition; in the Yahoo!

condition anger shows a slight increase at time 2 and then a slight decrease at time 3 (see

Table 1 for descriptive statistics). The 2 x 3 repeated measures MANOVA reported

significant changes in anger (F [2, 172] = 30.236, $p < .001$, $\eta^2 = .26$). A significant

condition by time interaction was also found (F [2, 172] = 38.696, $p < .001$, $\eta^2 = .31$).

Statistical significance was found between the Facebook and Yahoo! conditions (F [1,

86] = 36.835, $p < .001$, $\eta^2 = .30$).

Independent samples t-test revealed significant differences in anger at time 1 ($p <$

.001, $r^2 = .34$) and time 3 ($p < .001$, $r^2 = .43$). No significance was observed between

groups on anger for time 2.

Separate repeated measures MANOVA's were conducted in order to assess

changes in anger within each condition. For the Facebook condition, significant changes

in anger were observed (F [2, 86] = 45.181, $p < .001$, $\eta^2 = .512$). Bonferroni pairwise

comparisons affirm that these differences are due to differences in reported anger at time

25

2, which is significantly lower than that reported at time 1 ($p < .001$) and time 3 ($p <$

.001). For the Yahoo! condition, no significant changes in anger were observed (F [2,

86] = .651, p = .524, η^2 = .015). Bonferroni pairwise did not reveal statistical

significance in anger among any of the three conditions.

As a result of the statistically significant differences between groups in anger at

time 1, a 2 x 2 repeated measures MANCOVA was conducted with time 1 reports of

anger serving as the covariate in order to assess changes between groups from time 2 to

time 3. The analysis was not significant (F [1, 85] = .476, p = .492, η^2 = .006). However,

a significant interaction was reported (F [1, 85] = 25.341, $p < .001$, η^2 = .23). Time 1

anger was significant as a covariate (F [1, 85] = 22.776, $p < .001$, η^2 = .21). There were

no statistical differences in anger between groups (F [1, 85] = 3.170, p = .079, η^2 = .036).

Analyses of Covariance (ANCOVA) with reported anger at time 1 serving as the

covariate revealed significant differences in anger at time 2 (F [1, 85] = 4.423, $p < .05$, η^2

= .05) and time 3 (F [1, 85] = 15.255, $p < .001$, η^2 = .15). Time 1 anger was a significant

covariate at time 3 (F [1, 85] = 35.300, $p < .001$, η^2 = .29) but not at time 2 (F [1, 85] =

1.387, p = .242, η^2 = .02).

Separate repeated measures MANCOVA's with time 1 reports of anger as the

covariate were conducted in order to assess changes in anger from time 2 to time 3 within

each condition. For the Facebook condition, no significant changes were observed (F [1,

42] = .001, p = .980, η^2 = .000). Reported time 1 anger was significant as a covariate (F

[1, 42] = 21.559, $p < .001$, η^2 = .34). For the Yahoo! condition, no significant changes in

anger were observed (F [1, 42] = .232, p = .633, η^2 = .005). Reported time 1 anger was

not a significant covariate in the Yahoo condition (F [1, 42] = .001, p = .973, η^2 = .000).

Figure 2: *Reported anger in times 1 – 3 for Facebook and Yahoo! conditions*
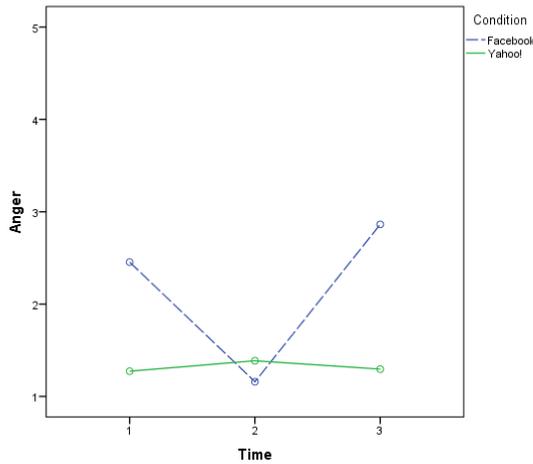
Figure 3: *Reported anger in times 2 and 3 for Facebook and Yahoo! after 2 x2 repeated measures ANCOVA*
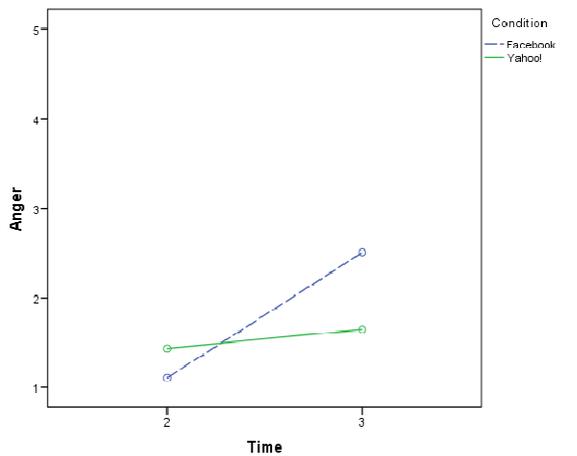
Covariates appearing in the model are evaluated at the following values. Anger1 – 1.86

Sadness. Figure 4 illustrates the trends observed for sadness where reported sadness declines at time 2 drastically and declines slightly by time 3 in the Facebook condition; in the Yahoo! condition sadness shows a slight increase at time 2 and then another increase at time 3 (see Table 1 for descriptive statistics). The 2 x 3 repeated measures MANOVA reported significant changes in sadness (F [1.495, 128.556] =

27

19.321, $p < .001$, $\eta^2 = .26$). A significant condition by time interaction was also found (F [1.495, 128.556] = 33.566, $p < .001$, $\eta^2 = .28$). Statistical significance was not found between the Facebook and Yahoo! conditions (F [1, 86] = 2.869, $p = .094$, $\eta^2 = .032$).

Independent samples t-test revealed significant differences in sadness at time 1 ($p < .001$, $r^2 = .30$) and time 3 ($p < .001$, $r^2 = .18$). No significance was observed between groups on sadness for time 2.

Separate repeated measures MANOVA's were conducted in order to assess changes in sadness within each condition. For the Facebook condition, significant changes in sadness were observed (F [1.296, 54.445] = 38.846, $p < .001$, $\eta^2 = .480$). Bonferroni pairwise comparisons affirm that these differences are largely due to differences in reported sadness at time 1, which is significantly higher than that reported at time 2 ($p < .001$) and time 3 ($p < .001$). For the Yahoo! condition, no significant changes in sadness were observed (F [2, 88] = 2.388, $p = .098$, $\eta^2 = .051$). Bonferroni pairwise comparisons did not reveal statistical significance in sadness among any of the three conditions.

A significant correlation was observed between sadness at time 3 and need for cognition ($r = .26$, $p < .05$). When data from each group were considered separately, this correlation remained significant for the Yahoo! group ($r = .44$, $p < .005$) but not the Facebook group. Because there was a simple effect between groups for sadness at time 3, a 2 x 3 repeated measures MANCOVA was conducted with need for cognition included as a covariate. Although need for cognition was a significant covariate (F [2, 150] = 5.959, $p < .005$, $\eta^2 = .07$), its inclusion did not result in any deviations from the original 2 x 3 repeated measures MANOVA.

As a result of the statistically significant differences between groups in sadness at time 1, a 2 x 2 repeated measures MANCOVA was conducted with time 1 reports of sadness serving as the covariate in order to assess changes between groups from time 2 to time 3. The analysis was not significant (F [1, 85] = .882, p = .350, η^2 = .010). Furthermore, there was not a significant interaction was reported (F [1, 85] = 3.895, p = .052, η^2 = .044). Time 1 sadness was not significant as a covariate (F [1, 85] = 1.060, p = .306, η^2 = .012). There were statistical differences in sadness between groups (F [1, 85] = 8.930, p = .004, η^2 = .095).

ANCOVAs with reported sadness at time 1 serving as the covariate revealed no significant differences in sadness at time 2 (F [1, 85] = 2.342, p = .130, η^2 = .027) and significant differences at time 3 (F [1, 85] = 14.447, p < .001, η^2 = .145). Time 1 sadness was a significant covariate at time 2 (F [1, 85] = 4.1011, p = .046, η^2 = .046) but not at time 3 (F [1, 85] = 1.416, p = .237, η^2 = .016).

Separate repeated measures MANCOVA's with time 1 reports of sadness as the covariate were conducted in order to assess changes in sadness from time 2 to time 3 within each condition. For the Facebook condition, no significant changes were observed (F [1, 41] = .468, p = .498, η^2 = .011). Reported time 1 sadness was not significant a covariate (F [1, 41] = .128, p = .722, η^2 = .003). For the Yahoo! condition, significant changes in sadness were observed (F [1, 43] = 4.908, p = .032, η^2 = .102). Reported time 1 sadness was not a significant covariate in the Yahoo condition (F [1, 43] = 2.050, p = .159, η^2 = .046).

Figure 4: *Reported sadness in times 1 – 3 for Facebook and Yahoo conditions*
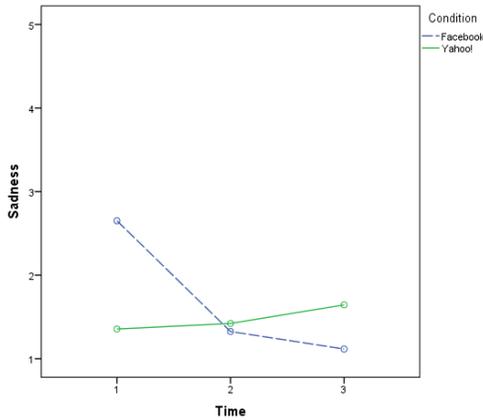
Figure 5: *Reported sadness in times 2 and 3 for Facebook and Yahoo*! *after 2 x2 repeated*

measures ANCOVA
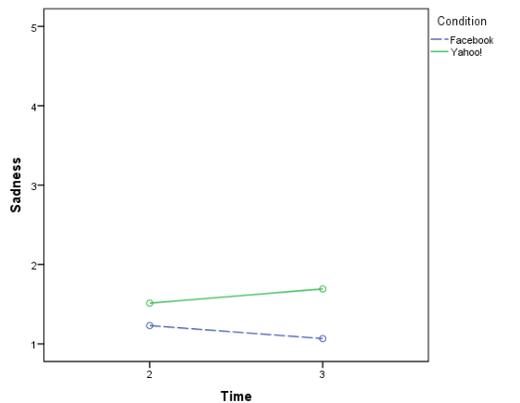
Covariates appearing in the model are evaluated at the following values: Sadness1 = 1.99

Positive and Negative Affect

Descriptive statistics for the PANAS can be found in Table 2.

Positive affect. Figure 6 illustrates the trends observed for positive affect where reported positive affect increases at time 2 drastically and declines slightly by time 3 in the Facebook condition; in the Yahoo! condition positive affect decreases slightly at time 2 and then increases slightly for time 3 (see Table 2 for descriptive statistics). The 2 x 3 repeated measures MANOVA reported significant changes in positive affect (F [1.808, 140.994] = 11.837, $p < .001$, $\eta^2 = .13$). A significant condition by time interaction was

also reported (F [1.808, 140.994] = 14.180, $p < .001$, $\eta^2 = .15$). Statistical significance was reported between the Facebook and Yahoo! conditions (F [1, 78] = 27.268, $p < .001$, $\eta^2 = .26$).

Table 2: *Descriptive statistics for positive and negative affect*

	Positive			**Negative**		
	T1	*T2*	*T3*	*T1*	*T2*	*T3*
F	15.44	20.64	19.86	22.74	20.63	23.49
	(4.52)	(6.82)	(5.74)	(4.58)	(5.99)	(7.10)
Y	26.66	26.16	27.19	17.11	16.37	16.21
	(7.56)	(8.96)	(9.36)	(4.53)	(4.89)	(4.41)
T	20.92	23.37	23.56	19.93	18.45	19.85
	(8.35)	(8.16)	(8.75)	(5.34)	(5.83)	(6.92)

Note: F = Facebook condition, Y = Yahoo! *condition, T = Total; Number in parenthesis = standard deviation*

Independent samples t-tests revealed significant differences in positive affect at time 1 ($p < .001$, $r^2 = .49$), time 2 ($p = .003$, $r^2 = .12$), and time 3 ($p < .001$, $r^2 = .21$).

Separate repeated measures MANOVA's were conducted in order to assess changes in positive affect within each condition. For the Facebook condition, significant changes in positive affect were observed (F [2, 82] = 33.743, $p < .001$, $\eta^2 = .451$). Bonferroni pairwise comparisons affirm that these differences are largely due to differences in reported positive affect at time 1, which is significantly lower than that reported at time 2 ($p < .001$) and time 3 ($p < .001$). For the Yahoo! condition, significant changes in positive affect were not observed (F [2, 74] = 1.453, $p = .240$, $\eta^2 = .038$).

Bonferroni pairwise comparisons did not reveal statistical significance in positive affect among any of the three conditions.

As a result of the statistically significant differences between groups in positive affect at time 1, a 2 x 2 repeated measures MANCOVA was conducted with time 1 reports of positive affect serving as the covariate in order to assess changes between groups from time 2 to time 3. The analysis was not significant (F [1, 77] = .647, p = .424, η^2 = .008). Furthermore, there was not a significant interaction reported (F [1, 77] = 3.517, p = .065, η^2 = .044). Time 1 positive affect was not a significant as a covariate (F [1, 77] = .257, p = .614, η^2 = .003). Statistically significant differences in positive affect existed between groups (F [1, 77] = 6.862, p = .011, η^2 = .082).

ANCOVA's with reported positive affect at time 1 serving as the covariate revealed significant differences in positive affect at time 2 (F [1, 77] = 11.778, p < .001, η^2 = .133), but not at time 3 (F [1, 77] = 2.287, p = .135, η^2 = .029). Time 1 positive affect was a significant covariate at time 2 (F [1, 77] = 111.451, p < .001, η^2 = .591) and time 3 (F [1, 77] = 74.952, p < .001, η^2 = .493).

Separate repeated measures MANCOVA's with time 1 reports of positive affect as the covariate were conducted in order to assess changes in positive affect from time 2 to time 3 within each condition. For the Facebook condition, no significant changes were observed (F [1, 40] = 2.484, p = .123, η^2 = .058). Reported time 1 positive affect was not significant as a covariate (F [1, 40] = 3.482, p = .069, η^2 = .080). For the Yahoo! condition, no significant changes in positive affect were observed (F [1, 36] = .027, p = .871, η^2 = .001). Reported time 1 positive affect was not a significant covariate in the Yahoo condition (F [1, 36] = .146, p = .704, η^2 = .004).

Figure 6: *Reported positive affect in times 1 – 3 for Facebook and Yahoo*! *conditions*
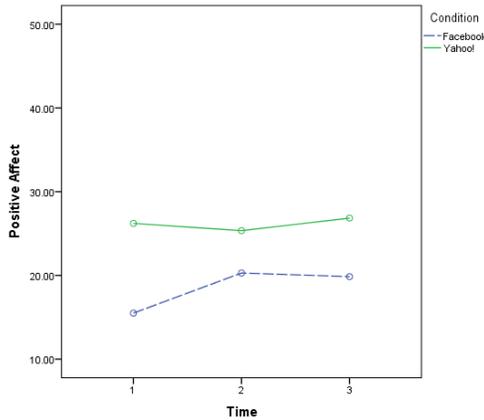
Figure 7: *Reported positive affect in times 2 and 3 for Facebook and Yahoo*! *after 2 x2*

repeated measures ANCOVA
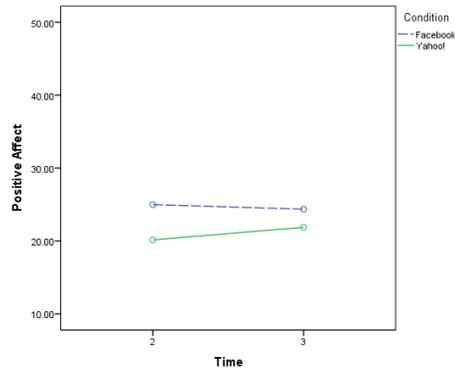
Covariates appearing in the model are evaluated at the following values: PositiveAffect1 = 20.5875

Negative affect. Figure 8 illustrates the trends observed for negative affect where

reported negative affect declines at time 2 slightly and increases slightly at time 3 in the

Facebook condition; in the Yahoo! condition negative affect shows a slight decrease at

time 2 and then another slight increase at time 3 (see Table 2 for descriptive statistics).

The 2 x 3 repeated measures MANOVA reported significant changes in negative affect

(F [1.641, 126.391] = 6.982, p = .003, η^2 = .083). A significant condition by time

interaction was also found (F [1.641, 126.391] = 3.329, p < .05, η^2 = .041). Statistical

significance was found between the Facebook and Yahoo! conditions (F [1, 77] = 33.115,

p < .001, η^2 = .301).

Independent samples t-test revealed significant differences in negative affect at time 1 ($p < .001$, $r^2 = .35$), time 2 ($p < .001$, $r^2 = .21$), and time 3 ($p < .001$, $r^2 = .30$).

Separate repeated measures MANOVA's were conducted in order to assess changes in negative affect within each condition. For the Facebook condition, significant changes in negative affect were observed (F [1.483, 57.853] = 7.683, $p = .003$, $\eta^2 = .165$). Bonferroni pairwise comparisons affirm that these differences are largely due to differences in reported negative affect at time 2, which is significantly lower than that reported at time 1 ($p = .001$) and time 3 ($p = .001$). For the Yahoo! condition, significant changes in negative affect were not observed (F [2, 76] = 1.343, $p = .267$, $\eta^2 = .09$). Bonferroni pairwise did not reveal statistical significance in negative affect among any of the three conditions.

Significant correlations were observed across the data between negative affect at time 2 and Narcissism Personality Inventory scores ($r = .27$, $p < .05$) and EMCD scale Facebook as a Vehicle for Popularity scores ($r = -.34$, p < .005). When data from each group were considered separately, the correlation between negative affect at time 2 and Narcissism Personality Inventory scores ($r = .39$, $p < .05$) and EMCD scale Facebook as a Vehicle for Popularity scores ($r = -.53$, $p < .001$) for the Facebook group but not the Yahoo! group. Significant correlations were observed across the data between negative affect at time 3 and Narcissism Personality Inventory scores ($r = .32$, $p < .005$) and EMCD scale Facebook as a Vehicle for Popularity scores ($r = -.24$, p < .05). When data from each group were considered separately, the correlation between negative affect at time 3 and Narcissism Personality Inventory scores remained significant for the Yahoo! group ($r = .51$, $p < .001$) but not the Facebook group. The correlation between negative

affect at time 3 and EMCD scale Facebook as a Vehicle for Popularity scores remained

significant for the Facebook ($r = -.36$, $p < .05$) but not the Yahoo! group.   Because there

were simple effects between groups for negative affect at times 2 and 3, a 2 x 3 repeated

measures MANCOVA was conducted with Narcissism Personality Inventory and EMCD

scale Facebook as a Vehicle for Popularity scores included as covariates. The inclusion

of these variables resulted in one deviation from the original 2 x 3 repeated measures

MANOVA as there were no longer significant within group changes in negative affect.

The interaction and between groups effect remained significant. Narcissism Personality

Inventory scores were the lone significant covariate (F [2, 132] = 4.679, $p < .05$, $\eta^2 =$

.07).

      As a result of the statistically significant differences between groups in negative

affect at time 1, a 2 x 2 repeated measures MANCOVA was conducted with time 1

reports of negative affect serving as the covariate in order to assess changes between

groups from time 2 to time 3. The analysis was not significant (F [1, 76] = 1.715, $p =$

.194, $\eta^2 = .022$). However, a significant interaction was reported (F [1, 76] = 6.474, $p =$

.013, $\eta^2 = .006$). Time 1 negative affect was not significant as a covariate (F [1, 85] =

.424, $p = .517$, $\eta^2 = .006$). There were no statistical differences in negative affect

between groups (F [1, 76] = .172 $p = .679$, $\eta^2 = .002$).

      ANCOVA's with reported negative affect at time 1 serving as the covariate

revealed non-significant differences in negative affect at time 2 (F [1, 76] = 1.110, $p =$

.295, $\eta^2 = .01$) and time 3 (F [1, 76] = 1.766 $p = .188$, $\eta^2 = .02$). Time 1 negative affect

was a significant covariate at time 2 (F [1, 76] = 116.222, $p < .001$, $\eta^2 = .604$) and at time

3 (F [1, 76] = 44.791, $p < .001$, $\eta^2 = .371$).

Separate repeated measures MANCOVA's with time 1 reports of negative affect as the covariate were conducted in order to assess changes in negative affect from time 2 to time 3 within each condition. For the Facebook condition, no significant changes were observed (F [1, 38] = 2.276, p = .140, η^2 = .057). Reported time 1 negative affect was not significant as a covariate (F [1, 38] = .602, p = .443, η^2 = .016). For the Yahoo! condition, no significant changes in negative affect were observed (F [1, 37] = .000, p = .984, η^2 = .000). Reported time 1 negative affect was not a significant covariate in the Yahoo condition (F [1, 37] = .019, p = .891, η^2 = .001).

Figure 8: *Reported negative affect in times 1 – 3 for Facebook and Yahoo! conditions*
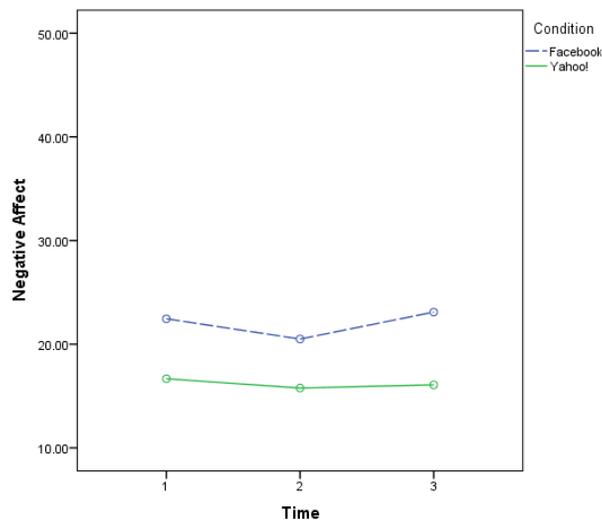
Figure 9: *Reported negative affect in times 2 and 3 for Facebook and Yahoo! after 2 x2 repeated measures ANCOVA*
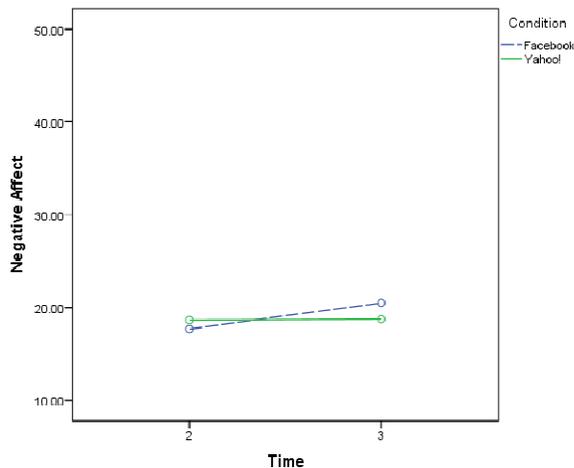
Covariates appearing in the model are evaluated at the following values: NegativeAffect1 = 19.5949

Social Compensation and Social Enhancement

As Zywica and Danowski (2008) noted, there are those who may use Facebook for purposes of social compensation and social enhancement. As such, it is important to account for the degree to which social compensators and social enhancers experience different affective states. As already noted, about half of the total sample was able to be identified as social compensators or social enhancers. Thus, these groupings could not be considered in the primary analyses. As such, these variables were considered separately. Specifically, an Analysis of Variance (ANOVA) was conducted on each considered discrete emotion and affective state at time 2 and time 3. Significant differences favoring social enhancers were seen for anger at time 3 (F [1, 37] = 5.737, $p < .05$, $\eta^2 = .13$), positive affect at time 2 (F [1, 37] = 10.20, $p < .005$, $\eta^2 = .22$), positive affect at time 3 (F [1, 37] = 8.805, $p < .005$, $\eta^2 = .19$), negative affect at time 2 (F [1, 37] = 4.388, $p < .05$, $\eta^2 = .11$), and negative affect at time 3 (F [1, 37] = 5.867, $p < .05$, $\eta^2 = .14$).

37

Discussion

The first hypothesis that an increase in positive affect and joy will be observed among those spending time on Facebook after controlling for relevant variables was supported. There was a significant increase from time 1 to time 2 for positive affect and joy for Facebook. These findings may be because Facebook involves social activity and social activity is related to positive affect (Berry & Hansen, 1996). Furthermore, the fact that Facebook users typically experience enjoyment from using the sites (Lin & Lu, 2011) may explain why the researchers found that positive affect and joy increased upon immediately logging on. However, it is important to note that at time 3, the Facebook condition's reported levels of joy decreased and positive affect did not significantly increase after time 2, demonstrating that increases in positive emotions are not necessarily sustained.

The first hypothesis also postulated that there would be a decrease in negative affect, anger, and sadness those spending time on Facebook. There was a significant decrease from time 1 to time 2 for negative affect, anger, and sadness for Facebook. These findings make sense due to the fact that positive affect and joy increased at time 2. However, at time 3, the Facebook condition's reported levels of anger and negative affect increased relative to time 2. Due to the fact that joy decreased at time 3, there may be something happening in terms of certain negative emotions at time 3 that was not previously expected. These observed findings are supported by the findings of Bevan, Pfyl, and Barclay (2012) who found that rumination and negative emotion are positively related to Facebook intensity. It is important to note, however, that the increases in anger and negative affect from time 2 to time 3 were no longer significant once time 1 reports

were employed as covariates, though there was still a statistically significant interaction. Hence, further research concerning negative emotions as time spent on Facebook increases.

What is interesting to note about these initial findings overall is that joy for Facebook saw the highest increase at time 2 and anger saw the largest decrease at time 2. Yet, these trends reverse at time 3, it is postulated that these affect modulations are occurring due to the fact that initially logging onto Facebook may have provided users with some sort of immediate gratification that was unable to continue after the participants remained logged on for a time. Furthermore, this immediate increase in positive affect and joy may be due to the fact that today's college students are attached to technology they use on a daily basis (Moeller, Powers, & Roberts, 2012). Facebook users may have been happy to have had Facebook at their disposal in the lab setting because it may have made them more at ease or because they had not been able to check Facebook during the first part of the in lab portion of the study.

A possible explanation for joy decrease and non-significant positive affect change at time 3 is that maybe participants got bored. Thus, maybe at first people enjoy the social interaction on Facebook, but after a time their value of this social interaction declines. The researchers did not create a variable to assess if the participants were bored. As a result, future research could include this variable to see if this had any effect on time 2 and 3 differences.

More research also needs to be conducted in order to understand why Facebook increases positive affect and joy right after logging on. Why does logging on for one minute create positive affect modulation as compared to being on the website for a period

of time or not being on the site at all? What specific immediate gratifications are being received by the Facebook user in order for the users' joy and positive affect self-reports to increase? It is important to note that the discrete emotion of sadness decreased significantly from time 1 and times 2 and 3, thus some affect modulations are not just immediate.

The second hypothesis that an increase in positive affect and joy will not be observed among those spending time on Yahoo! was supported. Significant changes in positive affect and joy were not observed The second hypothesis also postulated that a decrease in negative affect, anger, and sadness would not be observed among those spending time on Yahoo! because this website was meant to be a control condition. This was supported because no significant changes in negative affect, anger, and sadness were observed for the Yahoo! condition. This finding makes sense because social network site users receive enjoyment from using the sites (Lin & Lu, 2011), thus more positive affect should be generated by Facebook since it is a social network site as compared to Yahoo!, which is not.

The third hypothesis that those who spend time on Facebook will have greater increases in positive affect and joy than those who spend time on Yahoo! was mainly supported. Statistical significance was reported between the Facebook and Yahoo! conditions for positive affect, but Yahoo! was overall higher in positive affect. Once time 1 reports of positive affect were employed as a covariate, however, statistically significant differences remained favoring those in the Facebook condition. Statistical significance was reported between the Facebook and Yahoo! conditions for joy.

40

However, at time 3, the Yahoo! condition had significantly higher joy scores as compared to the Facebook condition.

Differences at time 1 that were observed in the study should not have occurred and thus are a limitation. After the neutral mood induction, all of the participants should have been neutral or close to neutral in affect and discrete emotions. However, the neutral mood induction did not do this for every participant. Even though the neutral mood induction did not work as it should have, the researchers were still able to see affect and discrete emotion modulations that were significant in the subsequent ANCOVA's. Nonetheless, future research should include a more effective neutral mood induction so that many more of the participants' initial affect and discrete emotions are closer to neutral.

Overall, Facebook was associated with significant changes in positive affect and joy. These variables increased particularly at time 2. However, the data also demonstrate that at time 3, the Yahoo! condition had significantly more joy than the Facebook condition. Conversely, for positive affect, the two conditions were not significantly different unlike the discrete emotion of joy.

The current study attempted to include surveys that may explain possible covariates for affect and emotion modulation. However, no covariates explained why the Yahoo! condition had more joy at time 3 as compared to the Facebook condition. Given that Yahoo! does not have the same social component as Facebook, these findings are curious and more research must be conducted in order to understand why those in the Yahoo! condition were positive and why joy was statistically higher for the Yahoo! condition as opposed to the Facebook.

Another interesting finding was that at time 3, the Yahoo! condition had a significant covariate in the variable narcissism. This is interesting because it makes more theoretical sense for Facebook to be associated with narcissism. Twenge, Konrath, Foster, Campbell, and Bushman (2008) stated that social networking website overusage could explain the increases in narcissism researchers are finding in their current data. Additionally, narcissism and Facebook have shown to be positively related previously by Ryan and Xenos (2011) in that Facebook users are typically more narcissistic. On Yahoo!, one cannot practice certain narcissistic characteristics like controlled self-presentation and self-promoting behavior (Buffardi & Campbell, 2008). As a result, why is narcissism related to Yahoo! where one is not self-presenting, but viewing various articles and media and why specifically at time 3? Research on narcissism and Yahoo! activity has not been conducted and thus should be in the future. Understanding this covariate more may shed more light on why affect and emotion modulation occurred as it did in the current study.

Although the researchers strived to conduct the study in an ecologically valid way, it is not without its limitations. Facebook is unlike many constructs that have been studied before due to the fact that it is an ever-evolving site. In addition, it was hard to find a control to use for Facebook because it is a unique site. Although Yahoo! is a popular site and is similar to Facebook in that news and events are accessible to the public, Facebook has a lot more users and is formatted differently. The fact that participants may use Facebook a lot more than Yahoo! is also a potential confound. As a result, participants may have been bored with Facebook, which may be why joy was significantly higher at time 3 for Yahoo!. Participants may have seen Yahoo! as novel

and exciting as compared to Facebook which they check often overall and may have checked right before entering the lab.

Another limitation is the possibility that practice effects effected how participants responded on the PANAS and emotion questionnaire. Participants may have realized they had answered similar questions at the beginning of the study and just answered the questions according to how they answered them at the beginning of the study rather than how they were feeling. Another factor that could not be completely controlled for are the individual differences in Facebook and Yahoo! use (i.e. motivations for using the site and frequency of use). Although the researchers strived to include covariates that may explain affect being altered due to logging onto either site, there may be other covariates that the researchers were unaware of and thus did not measure. Future researchers should strive to discover what covariates and motivations effect affect modulations from using Facebook versus another website like Yahoo!.

Another limitation of the study was the lack of control. Due to the nature of the study and striving to remain ecologically valid, the researchers did not want to restrain participants with what they can or cannot do on their respective sites. By not restricting participants on these websites, ecological validity is improved, but doing so does not allow as much control in the lab and participants may have too much autonomy during the manipulation.

Another limitation was that more participants would have helped the researchers observe more trends. Due to the fact that there were only 89 participants, the researchers were unable to create social enhancer and social compensator variables. Although the researchers were able to still observe these variables with positive affect and negative

affect, the researchers were unable to see the relation of being a social enhancer or social

compensator and the discrete emotions, except for anger which demonstrated time 3

differences where social enhancers had higher levels of anger. What is apparent from the

independent sample t-test is that positive and negative affect was different for social

enhancers and compensators at times 2 and 3. Social enhancers had higher levels of

positive and negative affect as compared to the social compensators. Although this

research furthers the knowledge about these two types of users, not a lot of information

could be discovered due to the small number of participants in these groups. In the future,

researchers should strive to study these groups in order to observe more group differences

and to see how affect changes based on what gratifications the two groups are or are not

receiving and how this leads to Facebook frequency and intensity of use.

There are strengths to the current study. In order to maintain ecological validity,

the researchers allowed the participants to log on for as long as they wished for up to 28

minutes in order to mirror them logging on in real life (Pempek, Yermolayeva, & Calvert,

2009). By not creating a floor for the minimum amount of time they could be on the sites,

participants' affect would not be altered by the fact that they are being forced to be on the

site for a minimum amount of time. Furthermore, by allowing participants to have

autonomy on these sites, the PANAS and the discrete emotion questionnaires were able

to capture how the participants felt when they logged onto the websites. There is no

reason to suspect that the emotions evoked by these sites are different outside of the lab,

so our data likely generalize to this experience. Lastly, due to the fact that affect and

emotion were measured after participants first logged on and after they logged off, the

researchers were able to observe whether the immediate gratification of logging on elicited any affect/emotion changes and compare it to when participants logged off.

To conclude, Facebook users experience an increase in positive affect and joy right after logging onto the site. However, this increase is short lived as positive affect and joy decrease after spending more time on the website while negative affect and anger increase after use. This finding may explain why Facebook users use Facebook frequently, but are not on site for long amounts of time. This finding is important due to the fact that Facebook is a cultural phenomenon that is affecting how people interact with others and how people spend their time. As a result, it is important to know and understand why users use Facebook and their behavior on the website. In this study, the current researchers were able to demonstrate that a possible motivation to use Facebook is to obtain an increase in positive affect and joy, but this is short lived and so frequent short-term use may be typical among users.

Appendix A

Need for Cognition Scale

Instructions: For each of the statements below, please indicate to what extent the statement is characteristic of you. If the statement is extremely uncharacteristic of you (not at all like you) please write a "1" to the left of the question; if the statement is extremely characteristic of you (very much like you) please write a "5" next to the question. Of course, a statement may be neither extremely uncharacteristic nor extremely characteristic of you; if so, please use the number in the middle of the scale that describes the best fit. Please keep the following scale in mind as you rate each of the statements below: 1 = extremely uncharacteristic; 2 = somewhat uncharacteristic; 3 = uncertain; 4 = somewhat characteristic; 5 = extremely characteristic.

1. I would prefer complex to simple problems.

2. I like to have the responsibility of handling a situation that requires a lot of thinking.

3. Thinking is not my idea of fun.*

4. I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.*

5. I try to anticipate and avoid situations where there is likely a chance I will have to think in depth about something.*

6. I find satisfaction in deliberating hard and for long hours.

7. I only think as hard as I have to.*

8. I prefer to think about small, daily projects to long-term ones.*

9. I like tasks that require little thought once I've learned them.*

10. The idea of relying on thought to make my way to the top appeals to me.

11. I really enjoy a task that involves coming up with new solutions to problems.

12. Learning new ways to think doesn't excite me very much.*

13. I prefer my life to be filled with puzzles that I must solve.

14. The notion of thinking abstractly is appealing to me.

15. I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.

16. I feel relief rather than satisfaction after completing a task that required a lot of mental effort.*

17. It's enough for me that something gets the job done; I don't care how or why it works.*

18. I usually end up deliberating about issues even when they do not affect me personally.

Asterisks designate the items that are reverse scored.

Appendix B

Narcissistic Personality Inventory

This inventory consists of a number of pairs of statements with which you may or may not identify.
Consider this example:
   A. "I like having authority over people."
   B. "I don't mind following orders."

Which of these two statements is closer to your own feelings about yourself? If you identify more with "liking to have authority over people," than with "not minding following orders," then you would choose option "A."

You may identify with both "A" and "B." In this case you should choose the statement which seems closer to yourself. Or, if you do not identify with either statement, select the one which is least objectionable or remote. In other words, read each pair of statements and then choose the one that is closer to your own feelings. Indicate your answer by selecting "A" or "B."

1. A. I have a natural talent for influencing people.
    B. I am not good at influencing people.
2. A. Modesty doesn't become me.
    B. I am essentially a modest person.
3. A. I would do almost anything on a dare.
    B. I tend to be a fairly cautious person.
4. A. When people compliment me I get embarrassed.
    B. I know that I am a good person because everybody keeps telling me so.
5. A. The thought of ruling the world frightens the hell out of me.
    B. If I ruled the world it would be a better place.
6. A. I can usually talk my way out of anything.
    B. I try to accept the consequences of my behavior.
7. A. I prefer to blend in with the crowd.
    B. I like to be the center of attention.
8. A. I will be a success.
    B. I am not too concerned about success.
9. A. I am no better or no worse than most people.
    B. I think I am a special person.
10. A. I am not sure if I would make a good leader.
    B. I see myself as a good leader.
11. A. I am assertive.

B. I wish I were more assertive.

12. A. I like to have authority over other people.
    B. I don't mind following orders.
13. A. I find it easy to manipulate people.
    B. I don't like it when I find myself manipulating people.
14. A. I insist upon getting the respect that is due me.
    B. I usually get the respect that I deserve.
15. A. I don't particularly like to show off my body.
    B. I like to show off my body.
16. A. I can read people like a book.
    B. People are sometimes hard to understand.
17. A. If I feel competent I am willing to take responsibility for making decisions.
    B. I like to take responsibility for making decisions.
18. A. I just want to be reasonably happy.
    B. I want to amount to something in the eyes of the world.
19. A. My body is nothing special.
    B. I like to look at my body.
20. A. I try not to be a show off.
    B. I will usually show off if I get the chance.
21. A. I always know what I am doing.
    B. Sometimes I am not sure of what I am doing.
22. A. I sometimes depend on people to get things done.
    B. I rarely depend on anyone else to get things done.
23. A. Sometimes I tell good stories.
    B. Everybody likes to hear my stories.
24. A. I expect a great deal from other people.
    B. I like to do things for other people.
25. A. I will never be satisfied until I get all that I deserve.
    B. I take my satisfactions as they come.
26. A. Compliments embarrass me.
    B. I like to be complimented.
27. A. I have a strong will to power.
    B. Power for its own sake doesn't interest me.
28. A. I don't care about new fads and fashions.
    B. I like to start new fads and fashions.
29. A. I like to look at myself in the mirror.
    B. I am not particularly interested in looking at myself in the mirror.
30. A. I really like to be the center of attention.
    B. It makes me uncomfortable to be the center of attention.
31. A. I can live my life in any way I want to.

B. People can't always live their lives in terms of what they want.

32. A. Being an authority doesn't mean that much to me.

   B. People always seem to recognize my authority.

33. A. I would prefer to be a leader.

   B. It makes little difference to me whether I am a leader or not.

34. A. I am going to be a great person.

   B. I hope I am going to be successful.

35. A. People sometimes believe what I tell them.

   B. I can make anybody believe anything I want them to.

36. A. I am a born leader.

   B. Leadership is a quality that takes a long time to develop.

37. A. I wish somebody would someday write my biography.

   B. I don't like people to pry into my life for any reason.

38. A. I get upset when people don't notice how I look when I go out in public.

   B. I don't mind blending into the crowd when I go out in public.

39. A. I am more capable than other people.

   B. There is a lot that I can learn from other people.

40. A. I am much like everybody else.

   B. I am an extraordinary person.

Electronic Media and Communication Scale

This questionnaire contains three sections, which address your usage of Facebook. Please complete each section.

SECTION I: Questions in this first section ask you about how often you use modern technological device Facebook. If you do not know the answer, please make your best estimate.

Facebook:
1. Do you have a Facebook account? _____ Yes _____ No
2. Do you log into your Facebook account? ___Yes ___No
3. If no to # 2, would you say you log in weekly or monthly? _____ Weekly _____ Monthly
4. If yes to #2, how often do you log in (estimate according to the scale below)?

    1   2   3   4   5   6   7

    Once or twice   Every couple   Hourly
                            of hours
5. Do you change your Facebook status daily? ___Yes ___No
6. If no to # 5, would you say you change your status weekly or monthly?
    ____ Weekly _____ Monthly
7. If yes to #5, how often do you change your status (estimate according to the scale below)?

    1   2   3   4   5   6   7

    Once or twice   Every couple   Hourly
                            of hours
8. How many photo albums do you have on your Facebook account? _____
9. How many photos are linked to your Facebook account? _____
10. How many friends are linked to your Facebook account? _____
11. How many lines is your "About Me" section on Facebook? _____

SECTION II: Questions in section two ask you to consider your attitudes about Facebook. Our world today is greatly affected by Facebook. Attitudes about Facebook have changed as its popularity has increased. We are interested in understanding ways in which people think about this modern technology.
Please respond according to the following scale: 1 = Strongly agree (SA), 2 = Agree (A), 3 = Neutral (N), 4 = Disagree (D), 5 = Strongly disagree (SD).

SA A N D SD
 1 2 3 4 5   1. It bothers me when people don't respond quickly to my texts or
                 Facebook status changes.

1 2 3 4 5   2. My Facebook page really shows my personality. **FSP**
1 2 3 4 5   3. I love to post on Facebook about the things that I've done.
1 2 3 4 5   4. I think the number of friends I have on Facebook speaks to
                  how much I am liked.
1 2 3 4 5   5. I feel bad for people who do not have a lot of Facebook
                  friends. **FVP**
1 2 3 4 5   6. The number of tagged Facebook pictures linked to my account
                  proves that I am popular. **FVP**
1 2 3 4 5   7. The number of friends I have on Facebook speaks to my
                  popularity. **FVP**
1 2 3 4 5   8. On Facebook, I like when people comment on my pictures and
                  posts.
1 2 3 4 5   9. On Facebook, I mainly post good pictures of myself. **FSP**
1 2 3 4 5   10. On Facebook, I like to post pictures that display my body. **EX**
1 2 3 4 5   11. On Facebook, I like to look at my own profile.
1 2 3 4 5   12. If you looked at my Facebook page, you would quickly get me or
                  understand me.
1 2 3 4 5   13. I get excited when people respond to my status changes and the
                  pictures I post on Facebook **FSP**
1 2 3 4 5   14. It would bother me to not have many Facebook friends. **FVP**
1 2 3 4 5   15. Having as many Facebook friends as I can is important to me. **FVP**
1 2 3 4 5   16. The number of wallposts/messages linked to my Facebook account
                  shows how popular I am. **FVP**
1 2 3 4 5   17. On Facebook, I often post pictures where I have been captured being
                  particularly amusing. **FSP**
1 2 3 4 5   18. On Facebook, I like for people to compliment me on my pictures. **FSP**
1 2 3 4 5   19. On Facebook, I get annoyed when people don't comment on my
                  pictures.
1 2 3 4 5   20. On Facebook, I like to look at the pictures that I post. **FSP**
1 2 3 4 5   21. On Facebook, I have the right to post whatever I want.
1 2 3 4 5   22. I can't believe how quickly time passes when I'm on Facebook.
1 2 3 4 5   23. I hate it when someone I don't know that well IM's me on Facebook.
1 2 3 4 5   24. The best thing about Facebook and texting is that I can easily let others
                  know what I'm up to. **FSP**
1 2 3 4 5   25. I enjoy posting notes about myself on Facebook.
1 2 3 4 5   26. On Facebook, posting good pictures of myself is not a priority to me.
1 2 3 4 5   27. On Facebook, I don't see why anyone would find my profile exciting.
1 2 3 4 5   28. On Facebook, I often let people know when I have done an exciting
                  activity by posting pictures or updating my status. **FSP**
1 2 3 4 5   29. My friends on Facebook are truly friends.
1 2 3 4 5   30. When I'm on Facebook, I'm most interested in seeing what others
                  have said about things that I've posted. **FSP**

SECTION III: Questions in section three ask you to consider your usage of Facebook.
Technological devices like Facebook affect the lives of individuals in unique ways.
People use this modern technological device for various reasons and in different

capacities. Please respond according to the following scale: 1 = Strongly agree (SA), 2 = Agree (A), 3 = Neutral (N), 4 = Disagree (D), 5 = Strongly disagree (SD).

SA A N D SD
1 2 3 4 5   1. I use Facebook to promote causes that I believe in. **INTP**
1 2 3 4 5   2. I use Facebook to connect with people who have mutual interests. **INTP**
1 2 3 4 5   3. I use Facebook to let people know about events that I have planned. **INTP**
1 2 3 4 5   4. I use Facebook to keep in touch with old friends.
1 2 3 4 5   5. I use Facebook to post and look at pictures.
1 2 3 4 5   6. I use Facebook to express my political beliefs.

Appendix D

Rosenberg Self-Esteem Scale

Please record the appropriate answer for each item, depending on whether you Strongly

agree, agree, disagree, or strongly disagree with it.

1 = Strongly agree 2 = Agree 3 = Disagree 4 = Strongly disagree

_____ 1. On the whole, I am satisfied with myself.

_____ 2. At times I think I am no good at all.

_____ 3. I feel that I have a number of good qualities.

_____ 4. I am able to do things as well as most other people.

_____ 5. I feel 1do not have much to be proud of.

_____ 6. I certainly feel useless at times.

_____ 7. I feel that I'm a person of worth.

_____ 8. I wish I could have more respect for myself.

_____ 9. All in all, I am inclined to think that I am a failure.

_____ 10. I take a positive attitude toward myself.

Center for Epidemiologic Studies Depression Scale (CES-D), NIMH

Below is a list of the ways you might have felt or behaved. Please tell me how often you have felt this way during the past week.

During the Past Week

Rarely or none of the time (less than 1 day)

Some or a little of the time (1-2 days)

Occasionally or a moderate amount of time (3-4 days)

Most or all of the time (5-7 days)

1. I was bothered by things that usually don't bother me.

2. I did not feel like eating; my appetite was poor.

3. I felt that I could not shake off the blues even with help from my family or friends.

4. I felt I was just as good as other people.

5. I had trouble keeping my mind on what I was doing.

6. I felt depressed.

7. I felt that everything I did was an effort.

8. I felt hopeful about the future.

9. I thought my life had been a failure.

10. I felt fearful.

11. My sleep was restless.

12. I was happy.

13. I talked less than usual.

14. I felt lonely.

15. People were unfriendly.

16. I enjoyed life.

17. I had crying spells.

18. I felt sad.

19. I felt that people dislike me.

20. I could not get "going."

SCORING: zero for answers in the first column, 1 for answers in the second column, 2 for answers in the third column, 3 for answers in the fourth column. The scoring of positive items is reversed. Possible range of scores is zero to 60, with the higher scores indicating the presence of more symptomology.

Social Compensator and Enhancer Questionnaire

1. How long have you been using Facebook?

   a) less than 1 month b) less than 6 months c) less than a year d) more than a year e) I do not use Facebook

2. How important is it for you to look popular on Facebook?

   a) very important b) important c) somewhat important d) neutral/neither e) not very important f) not important at all

3. Compared to other Facebook users, are you more popular, less popular, or about the same?

   a. more popular b. less popular. about the same

4. How popular would you consider yourself on Facebook?

   a) very popular b) popular c) somewhat popular d) neutral/neither e) some- what unpopular f) unpopular g) very unpopular

5. How popular would you consider yourself offline?

   a) very popular b) popular c) neutral/neither d) unpopular e) very unpopular

6. How popular were you in high school?

   a) very popular b) popular c) neutral/neither d) unpopular e) very unpopular

7. How popular would other people consider you on Facebook?

   a) very popular b) popular c) neutral/neither d) unpopular e) very unpopular

8. How popular would other people consider you offline?

   a) very popular b) popular c) neutral/neither d) unpopular e) very unpopular

9. What does it mean to you to be popular on Facebook?

10. Do you know someone who tries to be popular on Facebook?

   a. yes b. no If yes, what are they like?

11. What types of people want to be popular on Facebook?

Do you agree or disagree with the following statements?

12. Users with friends from more schools are more popular.

   a) strongly agree b) agree c) neither agree nor disagree d) disagree e) strongly disagree

13. Users who have more pictures tagged by friends are more popular.

   a) strongly agree b) agree c) neither agree nor disagree d) disagree e) strongly disagree

14. Age differences affect who tries to look popular online.

   a) strongly agree b) agree c) neither agree nor disagree d) disagree e) strongly disagree

15. How outgoing are you offline?

   a) Very outgoing b) Outgoing c) Neutral/Neither d) not outgoing e) not out- going at all

16. How outgoing are you on Facebook?

   a) Very outgoing b) Outgoing c) Somewhat outgoing d) Neutral/Neither e) not outgoing f) not outgoing at all

17. Do you think you reveal more about yourself to people you know from the

Internet than to real-life (non-net) friends?

a. A lot b. A little c. Not very much d. Not at all

18. Are there things your Internet friends know about you that you cannot share with real-life (non-Net) friends?

a. A lot b. A little c. Not very much d. Not at all

19. Do you express more facets, or sides, of yourself and personality to friends online than you do with those in ''real life''?

Never 1...2...3...4..5..6..7 All the Time

20. Would your friends and family be surprised if they were to read your Facebook profile or Facebook postings?

Not at all surprised 1...2...3...4..5..6..7 Extremely surprised

What would surprise your friends and family?

21. Do you ever exaggerate or make up information and put it in your profile?

a. Often b. Sometimes c. Not very often d. Never

22. Have you ever purposely done something to look cool or popular on Facebook?

a. Often b. Sometimes c. Not very often d. Never

If yes, what have you done to look cool or popular?

23. Do you ever change your profile on Facebook?

a. no b. yes If yes, what motivates you to change your profile?

24. Why do you log onto Facebook?

BELOW IS A LIST OF STATEMENTS DEALING WITH YOUR SOCIABILITY. IF YOU STRONGLY AGREE, CIRCLE SA. IF YOU AGREE WITH THE STATEMENT, CIRCLE A. IF YOU DISAGREE, CIRCLE D. IF YOU STRONGLY DISAGREE, CIRCLE SD.

59

1. I prefer to do things alone.

2. I almost always prefer to work and study with others rather than alone.

3. I have more friends than

4. I am very sociable.

5. I like to feel independent of people.

6. I tend to be a loner.

7. I prefer parties with lots of people.

8. I make friends very easily and quickly.

9. I tend to be shy.

To what extent are your friends on Facebook friends of one another?

a. Nearly all are friends of one another

b. Most are friends of one another

c. Some are friends of one another

d. A few are friends of one another

e. none are friends of one another

Appendix G

Ten Item Personality Inventory

Here are a number of personality traits that may or may not apply to you. Please write a number next to each statement to indicate the extent to which <u>you agree or disagree with that statement</u>. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies more strongly than the other.

1 = Disagree strongly	2 = Disagree moderately	3 = Disagree a little
4 = Neither agree nor disagree	5 = Agree a little	6 = Agree moderately
7 = Agree strongly		

I see myself as:

1. _____ Extraverted, enthusiastic.

2. _____ Critical, quarrelsome.

3. _____ Dependable, self-disciplined.

4. _____ Anxious, easily upset.

5. _____ Open to new experiences, complex.

6. _____ Reserved, quiet.

7. _____ Sympathetic, warm.

8. _____ Disorganized, careless.

9. _____ Calm, emotionally stable.

10. _____ Conventional, uncreative.

Ten Item Personality Inventory scale scoring ("R" denotes reverse-scored items):
    Extraversion: 1, 6R; Agreeableness: 2R, 7; Conscientiousness; 3, 8R; Emotional

    Stability: 4R, 9; Openness to Experiences: 5, 10R.

Appendix H

Positive and Negative Affect Schedule (PANAS)

This scale consists of a number of words that describe different feelings and emotions.

Read each item and then list the number from the scale below next to each word.

Indicate to what extent you feel this way right now, that is, at the present moment OR

indicate the extent you have felt this way over the past week (circle the instructions you

followed when taking this measure)

1	2	3	4	5
Very Slightly or Not at All	A Little	Moderately	Quite a Bit	Extremely

_____ 1. Interested   _____ 11. Irritable

_____ 2. Distressed   _____12. Alert

_____ 3. Excited   _____13. Ashamed

_____ 4. Upset   _____ 14. Inspired

_____ 5. Strong   _____ 15. Nervous

_____ 6. Guilty   _____ 16. Determined

_____ 7. Scared   _____ 17. Attentive

_____ 8. Hostile   _____ 18. Jittery

_____ 9. Enthusiastic   _____ 19. Active

_____ 10. Proud   _____ 20. Afraid

Scoring Instructions: Positive Affect Score: Add the scores on items 1, 3, 5, 9, 10, 12, 14,

16, 17, and 19. Scores can range from 10 – 50, with higher scores representing higher

levels of positive affect. Negative Affect Score: Add the scores on items 2, 4, 6, 7, 8, 11,

13, 15, 18, and 20. Scores can range from 10 – 50, with lower scores representing lower

levels of negative affect.

Appendix I

Emotion Questionnaire

The questionnaire indicates emotions felt at the given moment on a 5-point scale (1 = not at all to 5 = extremely). Emotion adjectives on the questionnaire included love, joy, surprise, anger, sadness, and fear.

Appendix J

Informed Consent

Project Title: <u>Like or Dislike: The Emotional Toll of Being on the Internet</u>

Investigator: <u>Lauren N. Weathers, Department of Psychology, 843-607-1200</u>

You are being asked to participate in a project conducted through Western Kentucky University. The University requires that you give your signed agreement to participate in this project.

The investigator will explain to you in detail the purpose of the project, the procedures to be used, and the potential benefits and possible risks of participation. You may ask him/her any questions you have to help you understand the project. A basic explanation of the project is written below. Please read this explanation and discuss with the researcher any questions you may have.

If you then decide to participate in the project, indicate your willingness to participate (consent) by clicking on the option that states "I consent to participating in this survey." If you choose not to take conduct the study please select the option that states "I do not consent to participating in this survey." Please print out this form to have a personal copy.

1. **Nature and Purpose of the Project:**
The purpose of this study is to examine how using a website may or may not alter how you are feeling.

2. **Explanation of Procedures:**
Before you enter the lab, you will answer several questionnaires. After answering these questionnaires, you will come into the lab to conduct the second part of the study. Your affect will be neutralized and then your mood will be assessed. Then, you will be asked to log onto a website. After a minute of logging onto this site, you will answer questions about your mood. You will then log back onto the website you were advised to visit, and stay on the site for as long as you would like, but for no more than 28 minutes. You will then answer mood questions.
3. **Discomfort and Risks:**
There are no known risks for participating in the current study.

4. **Benefits:**
There are no known benefits to participating in this study besides the fact that you will be aiding to further research on Internet behavior and affect modulations.

5. **Confidentiality:**
Your responses to all of the questions will remain confidential. All of your responses will not contain information that may lead to your identity. You will be assigned a unique and random code so that no identifying information will be attached to the data. The code will

be eight characters long where the first three letters will be the first three letters of your mother's maiden name, the next two characters will be the month you were born, and the last three characters will be the first three letters of the city in which you were born.

6.   **Refusal/Withdrawal:**

Refusal to participate in this study will have no effect on any future services you may be entitled to from the University. Anyone who agrees to participate in this study is free to withdraw from the study at any time with no penalty.

You understand also that it is not possible to identify all potential risks in an experimental procedure, and you believe that reasonable safeguards have been taken to minimize both the known and potential but unknown risks.

THE DATED APPROVAL ON THIS CONSENT FORM INDICATES THAT
THIS PROJECT HAS BEEN REVIEWED AND APPROVED BY
THE WESTERN KENTUCKY UNIVERSITY INSTITUTIONAL REVIEW BOARD
Paul Mooney, Human Protections Administrator
TELEPHONE: (270) 745-2129

Appendix K

Facebook and Yahoo! Activity Questions

Facebook
1. Did you like the usual amount of statuses?
    a. Less than usual   b. Usual amount c. More than usual
    b. How did this these particular statuses make you feel? 1. Sad 3. Neutral 5. Happy
2. Did you have the usual amount of notifications?
    a. Less than usual   b. Usual amount c. More than usual
    b. How did this amount of notifications make you feel? 1. Sad 3. Neutral 5. Happy
3. Did you write on the usual amount of people's wall?
    a. Less than usual   b. Usual amount c. More than usual
    b. How did writing these posts make you feel? 1. Sad 3. Neutral 5. Happy
4. Did you like the usual amount of comment(s)?
    a. Less than usual   b. Usual amount c. More than usual
    b. How did these comments make you feel? 1. Sad 3. Neutral 5. Happy
5. Did you go to a particular friends wall?
    a. If yes, how long were you on their page?
    b. How did going to this person's profile make you feel 1. Sad 3. Neutral 5. Happy
    c. What was their relationship with you?
        i. Boyfriend/girlfriend ii. Best friend   iii. Friend
        iv. Acquaintance v. Family member

6. Did you visit more than one friend's wall?
    a. If yes, how long were you on their page?
    b. What was their relationship with you?
        i. Boyfriend/girlfriend ii. Best friend   iii. Friend
        iv. Acquaintance v. Family member

7. Did you look at your update feed the usual amount of time?
        a. Less than usual b. Usual amount c. More than usual
8. Did you update your status?
    a. If so, what was the mood of your update?
            1. Sad 3. Neutral 5. Happy
9. Did you go through the usual amount of other's photo album?
    a. Less than usual   b. Usual amount c. More than usual
    b. How did these photo albums make you feel? 1. Sad 3. Neutral 5. Happy
10. Did you check the usual amount of fan page(s)?
    a. Less than usual   b. Usual amount c. More than usual
    b. How did these fan pages make you feel? 1. Sad 3. Neutral 5. Happy
11. Were you invited to the usual amount of events?
    a. Less than usual   b. Usual amount c. More than usual

b. How did this amount of invitations make you feel? 1. Sad 3. Neutral 5. Happy

12. Did you create the usual amount of events?

a. Less than usual   b. Usual amount   c. More than usual
b. If yes, what kind of event
c. How did creating these events make you feel? 1. Sad 3. Neutral 5. Happy

13. Did you accept the usual amount of friend requests?

a. Less than usual   b. Usual amount   c. More than usual
b. How did this amount of friend requests make you feel? 1. Sad 3. Neutral 5. Happy

Yahoo!

Did you read an entertainment article?

If yes, how many?

How did this article make you feel? 1. Sad 3. Neutral 5. Happy

Did you read a celebrity gossip article?

If yes, how many?

How did this article make you feel? 1. Sad 3. Neutral 5. Happy

Did you read a news article?

If yes, how many?

How did this article make you feel? 1. Sad 3. Neutral 5. Happy

Did you read a science article?

If yes, how many?

How did this article make you feel? 1. Sad 3. Neutral 5. Happy

Did you read a technology article?

If yes, how many?

How did this article make you feel? 1. Sad 3. Neutral 5. Happy

Did you read an article in the movies section?

If yes, how many?

How did this article make you feel? 1. Sad 3. Neutral 5. Happy

Did you read an article in the tv section?

If yes, how many?

How did this article make you feel? 1. Sad 3. Neutral 5. Happy

Did you read a sports article?

If yes, how many?

How did this article make you feel? 1. Sad 3. Neutral 5. Happy

Did you read a travel article?

If yes, how many?

How did this article make you feel? 1. Sad 3. Neutral 5. Happy

Did you read a health article?

If yes, how many?

How did this article make you feel? 1. Sad 3. Neutral 5. Happy

Did you read a shopping article?

If yes, how many?

How did this article make you feel? 1. Sad 3. Neutral 5. Happy

Did you read an article about international information?

If yes, how many?

How did this article make you feel? 1. Sad 3. Neutral 5. Happy

Did you read an international article?

If yes, how many?

How did this article make you feel? 1. Sad 3. Neutral 5. Happy

Did you read a lifestyle article?

If yes, how many?

How did this article make you feel? 1. Sad 3. Neutral 5. Happy

Appendix L

Demographics

Age ____

Gender: (circle one)   Male   Female

Grade (circle one):   Freshman   Sophomore   Junior   Senior

Ethnicity (circle one):
Asian   African American   Caucasian   Hispanic   Other

References

Aleman, A. M., & Wartman, K. L. (2009). *Online social networking on campus: Understanding what matters in student culture.* NY: Routledge/ Francis Taylor Group.

Attrill, A., & Jalil, R. (2011). Revealing only the superficial me: Exploring categorical self-disclosure online. *Computers in Human Behavior, 27*, 1634-1642. doi:10.1016/j.chb.2011.02.001

Bargh, J., & McKenna, K. (2004). The Internet and social life. *Annual Review of Psychology, 55*, 573-590.

Berry, D. S., & Hansen, J. S. (1996). Positive affect, negative affect, and social interaction. *Journal of Personality and Social Psychology, 4,* 796-809. doi: 10.1037/0022-3514.71.4.796

Berzonsky, M. D., & Sullivan, C. (1992). Social-cognitive aspects of identity style: Need for cognition, experiential openness, and introspection. *Journal of Adolescent Research, 7*, 140-155.

Bevan, J. L., Pfyl, J., & Barclay, B. (2012). Negative emotional and cognitive responses to being unfriended on Facebook: An exploratory study. *Computers in Human Behavior, 28*, 1458-1464.

Bonebrake, K. (2002). College students' Internet use, relationship formation, and personality correlates. *Cyberpsychology & Behavior, 5*, 551-557. doi:10.1089/109493102321018196

Bordia, P. (1997). Face-to-face versus computer-mediated communication: A synthesis of the experimental literature. *Journal of Business Communication, 34*, 99-120.

Bourdieu, P., & Wacquant, L. (1992). *An invitation to reflexive sociology*. Chicago: University Of Chicago Press.

Boyd, D. M., & Ellison, N. B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication*, *13*, 210-230. doi:10.1111/j.1083-6101.2007.00393.x

Buffardi, L. E., & Campbell, W. K. (2008). Narcissism and social networking web sites. *Personality & Social Psychology Bulletin, 34*, 1303-1314.

Cacioppo, J. T., & Petty, R. E. (1982). The need for cognition. *Journal of Personality and Social Psychology, 42*, 116-131

Cacioppo, J. T., Petty, R. E., & Kao, C. F. (1984). The efficient assessment of need for cognition. *Journal of Personality Assessment, 48,* 306-307.

Cooper, A., & Sportolari, L. (1997). Romance in cyberspace: Understanding online attraction. *Journal of Sex Education and Therapy, 22*, 7-14.

Crawford, J., & Henry, J. (2004). The Positive and Negative Affect Schedule (PANAS): Construct validity, measurement properties and normative data in a large non-clinical sample. *British Journal Of Clinical Psychology, 43*, 245-265.

Cunningham, M. R. (1988). What do you do when you're happy or blue? Mood, expectancies, and behavioral interest. *Motivation and Emotion, 12*, 309-331.

Dobson, C., Goudy, W. J., Keith, P. M., & Powers, E. A. (1979). Further analysis of Rosenberg's Self-Esteem Scale. *Psychological Reports, 44*, 639-641.

Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook "friends:" Social capital and college students' use of online social network sites. *Journal Of Computer-Mediated Communication*, *12*, 1143-1168. doi:10.1111/j.1083-

6101.2007.00367.x

Facebook. (2012). Retrieved from https://www.facebook.com/facebook

Fleming, J. S., & Courtney, B. E. (1984). The dimensionality of self-esteem: II. Hierarchical facet model for revised measurement scales. *Journal of Personality And Social Psychology, 46*, 404-421. doi:10.1037/0022-3514.46.2.404

George, K. L., Blazer, G. D., Hughes, C. D., & Fowler, N. (1989). Social support and the outcome of major depression. *British Journal of Psychiatry, 154*, 478-485.

Gosling, S. D., Rentfrow, P. J., & Swann, W. B. (2003). A Very Brief Measure of the Big Five Personality Domains. *Journal of Research in Personality, 37,* 504-528.

Greene, K., Derlega, V. J., & Mathews, A. (2006). Self-disclosure in personal relationships. In A. L. Vangelisti, D. Perlman, A. L. Vangelisti, D. Perlman (Eds.), The Cambridge handbook of personal relationships (pp. 409-427). Cambridge: Cambridge University Press.

Gross, J. J., & Levenson, R. W. (1995). Emotion elicitation using films. *Cognition and Emotion, 9*, 87-108. doi:10.1080/02699939508408966

Helliwell, J. F., & Putnam, R. D. (2004). The social context of well-being. *Philosophical Transactions of the Royal Society of London, 359*, 1435-1446.

Jelenchick, L. A., Eickhoff, J. C., & Moreno, M. A. (2012). "Facebook depression?" Social networking site use and depression in older adolescents. *The Journal of Adolescent Health, 52*, 128-130. doi: 10.1016/j.jadohealth.2012.05.008

Kang, Y. S., & Lee, H. (2010). Understanding the role of an IT artifact in online service continuance: An extended perspective of user satisfaction. *Computers in Human Behavior, 26*, 353–364.

Kim, H. W., Chan, H. C., & Gupta, S. (2007). Value-based adoption of mobile Internet: An empirical investigation. *Decision Support Systems, 43*, 111–126.

Lampe, C., Ellison, N. and Steinfield, C. (2006). A Face(book) in the Crowd: Social Searching vs. Social Browsing. In *Proceedings of the 2006 20th Anniversary Conference on Computer-Supported Cooperative Work* (CSCW 2006), 167-170. New York, NE: ACM Press.

Lenhart, A. (2009, April). *Teens and social media: An overview*. New York Department of Health and Mental Hygiene, New York, NY.

Lin, C. P., & Bhattacherjee, A. (2008). Elucidating individual intention to use interactive information technologies: The role of network externalities. *International Journal of Electronic Commerce, 13*, 85–108.

Lin, K., & Lu, H. (2011). Why people use social networking sites: An empirical study integrating network externalities and motivation theory. *Computers in Human Behavior, 27,* 1152-1161. doi:10.1016/j.chb.2010.12.009

Lorr, M., & Wunderlich, R. A. (1986). Two objective measures of self-esteem. *Journal of Personality Assessment, 50*, 18-23.

Lu, H. P., & Su, Y. J. P. (2009). Factors affecting purchase intention on mobile shopping web sites. *Internet Research, 19*, 442–458.

Mehdizadeh, S. (2010). Self-presentation 2.0: Narcissism and self-esteem on Facebook. *Cyberpsychology, Behavior & Social Networking, 13*, 357-364. doi:10.1089/cyber.2009.0257

Moeller, S., Eckert, S., Golitsinski, S., Koliska, M., Oh, S., Powers, E., & Roberts, J. (2012). *The world unplugged*. Retrieved from http://theworldunplugged.wordpress.com/

Moeller, S., Powers, E., & Roberts, J. (2012). El mundo desconectado y 24 horas sin medios: Alfabetización mediática para la conciencia crítica de los jóvenes. *Comunicar, 20*, 45-52. doi:10.3916/C39-2012.02-04

Moon, J. W., & Kim, Y. G. (2001). Extending the TAM for a World-Wide-Web context. *Information & Management, 38*, 217–230.

Morf, C. C., & Rhodewalt, F. (2001). Unraveling the paradoxes of narcissism: A dynamic self-regulatory processing model. *Psychological Inquiry, 12,* 177-196.

Most popular websites. (2012). Retrieved from http://mostpopularwebsites.net/

Muise, A., Christofides, E., & Desmarais, S. (2009). More information than you ever wanted to know – Does Facebook bring out the green-eyed monster of jealousy? *CyberPsychology & Behavior, 12,* 441-444.

Parks, M. R., & Floyd, K. (1996). Making friends in cyberspace. *Journal of Communication, 46*, 80-97.

Pempek, T. A., Yermolayeva, Y. A., & Calvert, S. L. (2009). College students' social networking experiences on Facebook. *Journal of Applied Developmental Psychology, 30,* 227-238.

Prince, M. J., Harwood, R. H., Blizard, R. A., Thomas, A., & Mann, A. H. (1997). Social support deficits, loneliness and life events as risk factors for depression in old age. The Gospel Oak Project VI. *Psychological Medicine*, *27*, 323-332.

Raacke, J., & Bonds-Raacke, J. (2008). MySpace and Facebook: Applying the uses and

    gratifications theory to exploring friend-networking sites. *CyberPsychology &*

    Behavior, *11*, 169-174. doi:10.1089/cpb.2007.0056

Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the

    general population. *Applied Psychological Measurement, 1,* 385-401.

Random.org-true random number service. (2012). Retrieved from

    http://www.random.org/

Raskin, R., & Terry, H. (1988). A principal-components analysis of the narcissistic

    personality inventory and further evidence of its construct validity. *Journal of*

    Personality and Social Psychology, *54*, 890-902. doi: 10.1037/0022-

    3514.54.5.890

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton

    University Press.

Russell, J. A., & Carroll, J. M. (1999). On the bipolarity of positive and negative affect.

    Psychological Bulletin, 125, 3–30.

Ryan, T., & Xenos, S. (2011). Who uses Facebook? An investigation into the relationship

    between the Big Five, shyness, narcissism, loneliness, and Facebook usage.

    Computers in Human Behavior, 27, 1658-1664. doi:10.1016/j.chb.2011.02.004

Saculla, M. M. (2010). Addressing Relationships Among Moral Judgment Development,

    Narcissism, And Electronic Media And Communication Devices. Unpublished

    Masters Thesis. Western Kentucky University.

Saculla, M. M., & Derryberry, W. P. (2011, April). *Addressing Relationships Among*

    Moral Judgment Development, Narcissism, and Electronic Media and

Communication Devices. Paper presented at the annual meeting of the American
Educational Research Association, New Orleans, LA.

Savin-Williams, R. C., & Jaquish, G. A. (1981). The assessment of adolescent self-
esteem: A Comparison of methods. *Journal of Personality, 49*, 324-336.
doi:10.1111/1467-6494.ep7380433

Schiffrin, H., Edelman, A., Falkenstern, M., & Stewart, C. (2010). The associations
among computer-mediated communication, relationships, and well-being.
Cyberpsychology, Behavior, and Social Networking,13, 299-306.
doi:10.1089/cyber.2009.0173

Shaver, P., Schwartz, J., Kirson, D., & O'Connor, C. (1987). Emotion knowledge: Further
exploration of a prototype approach. *Journal of Personality and Social
Psychology, 52,* 1061-1086.

Silber, E., & Tippett, J. S. (1965). Self-esteem: Clinical assessment and measurement
validation. *Psychological Reports, 16*, 1017-1071.
doi:10.2466/pr0.1965.16.3c.1017

Sledgianowski, D., & Kulviwat, S. (2009). Using social network sites: The effects of
playfulness, critical mass and trust in a hedonic context. *Journal of Computer
Information Systems, 49,* 74–83.

Sorrentino, R. M., Bobocel, D. R., Gitta, M. Z., Olson, J. M., & Hewitt, E. C. (1988).
Uncertainty orientation and persuasion: Individual differences in the effects of
personal relevance on social judgments. *Journal of Personality and Social
Psychology, 55*, 357-371.

Sorrentino, R. M., Short, J. C., & Raynor, J. O. (1984). Uncertainty orientation:

Implications for affective and cognitive views of achievement behavior. *Journal of Personality and Social Psychology, 46*, 189-206.

Stern, S. (2004). Expressions of identity online: Prominent features and gender differences in adolescents' World Wide Web home pages. *Journal of Broadcasting & Electronic Media*, *48*, 218-243. doi:10.1207/s15506878jobem4802_4

Suler, J. (2004). The online disinhibition effect. *CyberPsychology & Behavior, 7,* 321-326. doi:10.1089/1094931041291295

Teo, T. S. H., Lim, V. K. G., & Lai, R. Y. C. (1999). Intrinsic and extrinsic motivation in Internet usage. *Omega: International Journal of Management Science, 27*, 25–37.

Thoma, S.J., & Bebeau, M. (2008, April). *Moral Judgment Competency is Declining Over Time: Evidence From Twenty Years of Defining Issues Test Data*. Paper presented at the annual meeting of the American Educational Research Association, New York, NY.

Tidwell, L.C., & Walther, J.B. (2002). Computer-mediated communication effects on disclosure, impression, and interpersonal evaluations: Getting to know another a bit at a time. *Human Communication Research, 28*, 317-348. doi:10.1111/j.1468-2958.2002.tb00811.x

Twenge, J.M., Konrath, S., Foster, J.D., Campbell, W.K., and Bushman, B.J. (2008). Egos inflating over time: A cross-temporal meta-analysis of the narcissistic personality inventory. *Journal of Personality, 76*, 875-901.

Valkenburg, P. M., Peter, J., & Schouten, A. P. (2006). Friend networking sites and their

    relationship to adolescents' well-being and social self-esteem. *CyberPsychology &*

    Behavior, 9, 584-590. doi:10.1089/cpb.2006.9.584

van der Heijden, H. (2004). User acceptance of hedonic information systems. *MIS*

    Quarterly, 28, 695–704.

Vazire, S., & Gosling, S. D. (2004). e-Perceptions: Personality impressions based on

    personal Websites. *Journal of Personality and Social Psychology, 87*, 123-132.

    doi:10.1037/0022-3514.87.1.123

Venkatraman, M. P., Marlino, D., Kardes, E. R., & Sklar, K. B. (1990). The interactive

    effects of message appeal and individual differences on information processing

    and persuasion. *Psychology and Marketing, 7,* 85-96.

Vittengl, J. R., & Holt, C. S. (1998). A time-series diary study of mood and social

    interaction. *Motivation & Emotion, 22*, 255-275.

Wallace, P. (1999). *The Psychology of the Internet*. New York: Cambridge University

    Press.

Watson, D., Clark, L. A., McIntyre, C. W., & Hamaker, S. (1992). Affect, personality,

    and social activity. *Journal of Personality and Social Psychology, 63*, 1011–1025.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief

    measures of positive and negative affect: The PANAS scales. *Journal of*

    Personality and Social Psychology, 54, 1063-1070.

Weathers, L. N. (2012, May). *Attention, Support, and Face-to-Face Self-Disclosure as*

    Predictors of Self-Disclosure on Facebook. Poster presented at the Association

    for Psychological Sciences Annual Convention, Chicago, Illinois.

Wise, K., Alhabash, S., & Park, H. (2010). Emotional Responses During Social

    Information Seeking on Facebook. *Cyberpsychology, Behavior & Social*

    Networking, 13, 555-562. doi:10.1089/cyber.2009.0365

Wittman, R., & Mienaltowski, A., (2010, March). *The impact of depressive*

    symptomatology on negative facial expression discrimination. Poster presented at

    the annual convention of Southeastern Psychological Association, Chattanooga,

    TN.

Wyer, R. S., Clore, G. L., & Isbell, L. M. (1999). Affect and information processing. In

    M. P. Zanna (Ed.). *Advances in experimental social psychology* (Vol. 31, pp. 1–

    77). San Diego, CA: Academic Press.

Zarkin, D. F. (1983). Physical attractiveness, sociability, athletic ability, and children's

    preference for their peers. *Journal of Psychology, 115*, 117–122.

Zywica, J., & Danowski, J. (2008). The faces of Facebookers: Investigating social

    enhancement and social compensation hypotheses; predicting Facebook and

    offline popularity from sociability and self-esteem, and mapping the meanings of

    popularity with semantic networks. *Journal of Computer-Mediated*

    Communication, 14, 1-34. doi:10.1111/j.1083-6101.2008.01429.x