

WHAT YOU WANT VS WHAT YOU GET: A STUDY OF THE EFFECTS OF
SURPLUS AND DEFICIT SOCIAL SUPPORT GAPS IN UNIVERSITY STUDENT
FACEBOOK USE

BY

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DEDICATION

To Michael and Hannah with love

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ABSTRACT

In the fast-paced world of technology in computer-mediated communication, use of social network sites has grown tremendously. University students have gravitated to these sites, especially Facebook for an expanding network of “friends.” However, are university students getting the support they want on Facebook? This research examines and extends the previous scholarly work on unmatched social support gaps to student use of Facebook through the framework of optimal matching. Specifically, this study looks at the effects of surplus and deficit nurturant support gaps (emotional and network), and surplus and deficit action-facilitating support gaps (informational). The effects studied are the negative relational outcomes of perceived stress, social isolation, loneliness, and depression. Also studied are esteem improvement, and the emotions of anger and happiness. Results indicated support for a surplus of action-facilitating support predicted depressive symptoms. Also, although not hypothesized, results indicated negative outcomes of depression and lowered esteem for a surplus of nurturant support. These findings question positive support available for students on Facebook, and suggest use of Facebook to be used not for authentic relationship-building, but for entertainment value.

INTRODUCTION

Vast advances in technology over the past several decades have changed how individuals communicate and seek support online (Walther & Parks, 2002). Computer-mediated communication (CMC) is communication that takes place online, such as blogs, video conversations, social networking sites (SNS) with instant messaging, group message boards, support groups, texting, and email (Rains, Peterson, & Wright, 2015). Online communication provides users with an efficient method to connect, offer and receive support from others quickly regardless of location, to build, maintain, and enhance relationships and social networks (Ellison, Vitak, Gray, & Lampe, 2014; Kim, Sohn, & Choi, 2011; Li, Chen, & Popiel, 2015). One of the most popular forms of online communication in our current society is Facebook, with over one billion daily users as of September, 2016 (“Company Info | Facebook Newsroom,” n.d.). Also, since young adults from the ages of 18 to 29 are the most active users of Facebook at 88 percent (“Company Info | Facebook Newsroom,” n.d.), this study focuses on the relationships within the context of university students (Greenwood, Perrin, & Duggan, 2016).

One of the main reasons users become active on the social network site of Facebook is to seek support (Kim et al., 2011). Research indicates positive outcomes from the use of Facebook, with active use leading to higher levels of self-esteem, and an increase of social ties and social capital, and positive well-being (Ellison, Gray, Lampe, & Fiore, 2014; Holmstrom, 2015; Kaczmarek & Drązkowski, 2014). Scholars have also noted differences in supportive behavior from friendships on Facebook based on the strength of these social ties; a greater network of friends from distant relationships, or weaker ties, is beneficial (Granovetter, 1973; Wright & Miller, 2010; Wright & Rains,

2014). However, a growing body of research in online social support also yields mixed outcomes, indicating that online social support may not provide positive benefits in all situations, especially in the use of social networking sites. In one recent study, Park et al. (2016) found a positive correlation with depression when users disclose negative information on Facebook. Other studies revealed negative outcomes from increased use of Facebook, such as increased envy, addictive behaviors, lower quality of life, and depression, (Chen & Lee, 2013; Kross et al., 2013; McCloskey, Iwanicki, Lauterbach, Giammittorio, & Maxwell, 2015; Song & Chen, 2014).

The complexities surrounding the discrepancies in effects of social support in computer-mediated communication may be a result of gaps in the social support people desire and the support people receive (High & Steuber, 2014; McLaren & High, 2015; Xu & Burleson, 2001). Existing literature specifies that support gaps are useful for understanding supportive interaction consequences, and why some support is not favorable at all times (Matsunaga, 2011; McLaren & High, 2015; Xu & Burleson, 2001). This study is framed within the optimal matching model, which purports the need to match the received supportive interaction of a particular type to the support type individuals desire (Cutrona, 1990; Cutrona & Russell, 1990; Cutrona, Shaffer, Wesner, & Gardner, 2007; High & Steuber, 2014; McLaren & High, 2015; Xu & Burleson, 2001). Delving deeper, this study examines how an overflow or shortage of supportive behavior one desires and receives by support type may result in negative outcomes (i.e., perceived stress, social isolation, loneliness, and depression), or a positive outcome such as an increase in an individual's self-worth. I also extend the existing online research by

probing into the strong emotions of anger and happiness as possible effects from a surfeit and dearth of support gaps.

Stated collectively, this research adds to the literature of online social support gaps by examining the effects of support gaps of selected types within two *dimensions*: *nurturant support* (emotional and network) and *action-facilitating support* (informational), and *form* (surplus and deficit of support gaps) on *negative relational outcomes* of perceived stress, social isolation, loneliness, and depression. Also, I study the relationship between these gaps and *esteem improvement* (positive self-esteem), and the effects of the types and forms of these gaps on the *emotions of anger and happiness*. I review the literature on supportive interaction and listed outcome variables, offer hypotheses, and design a survey study to test my logic.

Social Support

Are students getting the online social support they want? Support-seeking behavior, or social support, is caring for someone in a loving way, providing value, worth, and belonging (Cobb, 1995). Social support has been studied by a multitude of scholars who agree to the positive physical and mental health benefits such as higher self-esteem, of receiving support in times of stress (Cobb, 1995; Cohen & Wills, 1985; Cutrona, 1990; Lazarus & Folkman, 1984; Zimet, Dahlem, Zimet, & Farley, 1988). Stress may also lead to negative behaviors and consequences such as loneliness, extreme emotion, and depression (Brock & Lawrence, 2009; Cutrona, 1996). Lack of social connections has also been associated with much less favorable outcomes of increased stress, loneliness, isolation, and depression (Arkar, Sari, & Fidaner, 2004; Ponzetti, 1990; Vinokur & Selzer, 1975). Since university students experience varying levels of stress

during their academic career, this study focuses on student support-seeking behavior in an online setting, to investigate if the quality of support students receive is what they desire.

Social Support Gaps and the Optimal Matching Hypothesis

Social support gaps are the differences between the support an individual desires and receives (High & Steuber, 2014; Xu & Burleson, 2001). Scholars have recently begun to research gaps in social support and the resulting negative consequences associated with these gaps, such as increased stress, frustration, dissatisfaction with relationships, lowered esteem, hurt feelings, loneliness, and negative mental health issues such as depression (High & Steuber, 2014; Xu & Burleson, 2001). Research has also found that the basic need to belong is an important aspect in the emotional and physical well-being of individuals (Baumeister, & Leary, 1995).

Xu & Burleson (2001) evaluated offline social support gaps between married couples and found discrepancies in desired support. Previous research proposed the support gap hypothesis (SGH), which refers to the differences between social support experienced and desired (Cutrona, 1996; Xu & Burleson, 2001). High & Steuber (2014) expanded gap research with a study of the adequacy (gaps) of support in infertile women, which led to opposing results. Previous research has also found all gaps to be harmful, thus indicating further research in support gaps to ascertain which and how particular gaps affect well-being (High & Steuber, 2014; Matsunaga, 2011; Xu & Burleson, 2001).

These inconsistent findings in support gaps may be explained by the optimal matching hypothesis, which states that if an individual's received support is not matched

with the individual's experienced stress, the received support may lead to undesirable consequences (Cutrona & Russell, 1990). When stress is experienced and out of the control of an individual, nurturing support may provide the most comfort for the person in need, whereas an individual that is experiencing stress that is controllable may be best alleviated by supportive action (Cutrona & Russell, 1990; McLaren & High, 2015). The optimal matching model builds on prior research of support matching and gaps within five types: *emotional, esteem, network, informational, and tangible*, and accepts that some types of support may be more beneficial than others under specific instances (Cutrona, 1990; Cutrona & Russell, 1990; Cutrona et al., 2007; McLaren & High, 2015; Rains et al., 2015). In optimal matching, the quality of support increases when the support type desired matches with the received support type (McLaren & High, 2015; Rains et al., 2015).

The types of support may be divided into two dimensions based on styles of coping: *Nurturing support* consists of *emotional, esteem* and *network*, and assists individuals in dealing with stressors, and *action-facilitating support* includes *informational* and *tangible*, and promotes behavior to help lessen a stressor (Lazarus & Folkman, 1984; Rains et al., 2015). *Emotional support* is an expression of caring and warmth for another person, *esteem support* is behavior that provides affirmation and validation, *network support* is defined as expressions that generate connectedness and belonging (Xu & Burleson, 2001). *Informational support* is the provision of facts or advice about coping (High & Steuber, 2014), and *tangible support* is material assistance or services (Xu & Burleson, 2001). In this exploratory study, I refer to types of support within two dimensions, *nurturing* and *action-facilitating support*, as established in

previous research (McLaren & High, 2015; Rains et al., 2015). Further, I examine *nurturing support* to include only emotional and network support, and *action-facilitating support* to include only *informational support*.

Social Network Site of Facebook and Optimal Matching

Facebook is one of the largest social networking sites, and is a popular site for university students to interact with friends (Kim & Lee, 2010). Facebook was originated in 2004 by Mark Zuckerberg within a Harvard dormitory in an effort to more easily connect to friends within the school's social network ("Company Info | Facebook Newsroom," n.d.). This design centering on a friendship network is a main attraction of Facebook to most users. The number of monthly active users of Facebook now exceeds 1.79 billion people ("Company Info | Facebook Newsroom," n.d., "Facebook users worldwide 2016," n.d.). This magnitude of users provides a rich palette for investigations into why so many people are attracted to this computer-mediated communication, and also to ascertain the effectiveness and quality of that support. Kim's study (2014) has equated the number of Facebook friends with a similar level of perceived social support, which in turn may reduce stress, and lead to a more positive quality of life. Users of Facebook may also have closer, more honest, and more understanding interpersonal relationships than nonusers (Hampton, Goulet, Rainie, & Purcell, 2011).

The optimal matching model, the matching of an individual's received support to experienced stressor (Cutrona & Russell, 1990; McLaren & High, 2015) provides a useful framework to study why certain types of support may be more present in computer-mediated communication like Facebook, and if that support is matched effectively in student populations (Cutrona, 1990; Cutrona & Russell, 1990; Cutrona et

al., 2007). While sufficient research exists on social support online (Grieve, Indian, Witteveen, Tolan, & Marrington, 2013; Turkle, 2012), there is a void of research in online social support gaps.

Nurturant support. For the purpose of this study of online interaction, the types of support are collapsed into two dimensions, *nurturant* and *action-facilitating support*. Only two types of *nurturant support* will be examined: *emotional* (caring and warm expressions) and *network* (connectedness expression), without including the third *esteem* (self-worth) type. Emotional support is one of the most salient types of social support, and therefore is included, as well as network support. Recent research is conflicting in determining if Facebook friends provide the amount of emotional support and close friendships users desire, with wall postings, comments, profile presentations, and private messaging in the absence of offline interaction. Studies have documented an increase of social capital through active Facebook use, personal disclosures, positive impression management, (Ellison, Steinfield, & Lampe, 2007; Ellison et al., 2014; Kim & Lee, 2010; Kim et al., 2011; Li et al., 2015). Some research stresses the limitations of social support on computer-mediated communication, with the absence of physical manifestations of support such as touching, hugging, receiving soothing looks, and holding hands (Ahn & Shin, 2013). With the widespread use of Facebook, an individual's emotional support satisfaction or quality of emotional support is important to investigate. The study of the other nurturing support type is network support, which is appropriate to include since Facebook encourages the accumulation of a large number of "friends" to create a network community (Rains et al., 2015). The esteem type is omitted and repositioned as an effect of gaps in this study.

Action-facilitating support. The *action-facilitating support* type included in this study is *informational support*, (advice) which is also an important category to examine in the context of Facebook (Rains et al., 2015). The immense amount of practical information available online steadily increases as technology increases. Businesses and entertainers have gravitated to Facebook to provide users basic information such as location, hours of operation, contact information, and photos. Many users gravitate to Facebook for supportive health-related reasons, such as locating grief or illness support groups, doctor or hospital information, and disease and symptom checking (Rains et al., 2015). In an online setting, the *tangible* type, material assistance, is not considered.

Existent research in support gaps and support matching has mainly involved subjects in offline couple relationships (High & Steuber, 2014; Priem & Solomon, 2015; Xu & Burleson, 2001), and less in computer-mediated communication. Therefore, this study offers to add to existing research in social support gaps and the optimal matching theory by examining effects of the gaps in *nurturant* and *action-facilitating support* relationships within the online setting of Facebook.

Form of surplus and deficit support gaps. The *form* (surplus and deficit support gaps) is also included in this examination of supportive Facebook interaction to provide more understanding and predictions of unmatched support gaps (Cutrona et al., 2007; McLaren & High, 2015). Research has indicated that people with an over-benefited emotional support experienced positive outcomes, while people that experienced over-benefited informational support led to negative outcomes (McLaren & High, 2015). Research on the effects of unmatched social support gaps has revealed conflicting consequences, such as hurt feelings and differences in levels of self-esteem by particular

dimension or type of support (Brock & Lawrence, 2009; Holmstrom, 2015; Holmstrom, Russell, & Clare, 2013; McLaren & High, 2015). Within their study, McLaren and High (2015) found an abundance of emotional support received (higher than desired) indicated higher self-esteem, and greater sense of being cared for, but individuals that received higher amounts of informational support than desired indicated negative outcomes such as an increase of hurt feelings and lessened esteem. More literature on *dimensions* (*nurturant and action-facilitating*) and *form* (surplus and deficit support gaps) of Facebook users may help explain some of these discrepancies in results, and add to the support gap literature by extending research to an online setting.

Consequences of Unmatched Support Gaps on Facebook

As stated earlier, previous recent support gap research has indicated conflicting results when an individual receives more support than desired, or less support than desired, depending on support type (High & Steuber, 2014; McLaren & High, 2015). Unmatched support gaps that are either in surplus or deficit may lead to undesirable results. In this study, I suggest *negative relational outcomes* may be a result of unmatched support gaps by individuals when they are faced with a stressor. Also, since a person's self-worth may be influenced by the abundance of, or unmet amounts of social support received and desired (by dimension and type), I position self-esteem as a positive result of social support in this study as *esteem improvement*. When stressed, an individual may expect a certain amount of support from a family member, friend, or intimate; when those supportive needs and desires are not met, an individual may experience intense negative emotions, dissatisfaction in relationships, and anger (Brock & Lawrence, 2009; Cutrona, 1996; Matsunaga, 2011; Symister & Friend, 2003). Conversely, when an

individual's supportive desires are met and/or exceeded, positive outcomes may ensue, such as intense feelings of love and happiness. In this study, I examine relational outcomes, individuals' feelings of self-worth, and the *emotions of anger and happiness* within the context of Facebook.

Negative Relational Outcomes of Unmatched Support Gaps

Negative consequences of unmet social support desires within relationships are well-documented in the literature, but less so in computer-mediated communication, and so are of particular interest in the present study within users' support seeking behavior on Facebook (Besser & Zeigler-Hill, 2014; D'Zurilla & Sheedy, 1991; Hashim, 2003; Kross et al., 2013; Matsunaga, 2011; Vinokur & Selzer, 1975; Xu & Burleson, 2001). Less than positive outcomes may arise from unmet support desires within interpersonal and social relationships. Individuals who experience a deficit of emotional support and a surplus of informational support are most affected by negative consequences (High & Steuber, 2014; McLaren & High, 2015; Rains et al., 2015). I further this research pattern of negative results by extending the setting to Facebook. In this study, I examine the effect of dimensions of types, and forms of support of Facebook users on the *negative relational outcomes of perceived stress, social isolation, loneliness, and depression*. Perceived stress is the perception of a situation in life as stressful (Cohen, Kamarck, & Mermelstein, 1983). Social isolation refers to an individual who is living without a companion (Hawthorne, 2006), and loneliness is related to a personal scaled feeling of being alone, even in the presence of others, and lacking the presence of a close relationship (Peplau & Perlman, 1982; Russell, Cutrona, McRae, & Gomez, 2012). Socially isolated people are at greater risk for loneliness, which may also lead to

depression, a mental health affective disorder pertaining to sustained periods of sadness, low self-worth, and low energy (Beck & Alford, 2009).

Perceived stress. Perceived stress is defined as a relationship between an individual and environment in which an individual's appraisal exceeds the person's resources, and negatively affects the overall health of the individual (Folkman, 1984; Lazarus, 1990; Lazarus & Folkman, 1984). Although stress is a constant in our lives today in varying degrees, research concurs that too much stress has detrimental effects on the body, mentally and physically (Chen, Wong, Ran, & Gilson, 2009; Cohen & Wills, 1985; D'Zurilla & Sheedy, 1991; Morosanu, Handley, & O'Donovan, 2010). Perceived stress also refers to the amount of stress individuals may feel from a life situation (Cohen et al., 1983). Some users, especially university students, may feel less connected and unsatisfied with their social lives if they do not feel supported during stresses of university life (e.g. developing new relationships, time management, academics) (Arkar et al., 2004; D'Zurilla & Sheedy, 1991). Students may also be more inclined to reach out for support from the less relationally risky anonymous contacts of their network of Facebook friends in matters of sensitive topics, which may also relieve stress.

Social isolation. Individuals living without companionship is a broad definition of being socially isolated (Hawthorne, 2006). Hawthorne argues that this isolation may indicate the absence of a trusted person, a lack of interactions with a trusted person, and feeling as though one does not have anyone to be supportive during times of stress or crisis (2006). Recent research in computer-mediated communication reveals a connection between individuals that are socially isolated (introverted personality, socially awkward, physical mobility-impairment, in remote physical locations) and the propensity for online

communication such as social networking sites (Ahn & Shin, 2013; Caplan, 2003; Haythornthwaite, 2005; Kim et al., 2011; Shaw & Gant, 2002; Turkle, 2012; Walther, 1996). Cantor and Sanderson's study (1999) states that social isolation is associated with poorer quality of life (related to health), meaning in life, satisfaction levels, and well-being. Another study also indicated an association of isolation with higher healthcare costs (Ellaway, Wood, MacIntyre, 1999). The key connective of social isolation is (the lack of) personal relationships (Dykstra, 1990, 1995).

Rainie and Wellman (2012) argue that individuals' frequent use of CMC has been misunderstood in the past, and that individuals are not isolating themselves, but are communicating with other individuals. Recent magnified use of technology is reflective of a transposition in how people relate to others (Rainie & Wellman, 2012). Further research is needed to understand more about negative effects of support gaps and feelings of isolation among individuals using Facebook.

Loneliness. Loneliness is a complex construct, and may refer to an individual who does not feel supported, and may feel alone. In this context, a person may feel lonely even when surrounded by others, or even in the presence of a family member, and even a spouse. Lonely individuals may experience more negative health and emotional consequences in the absence of close or intimate others (Russell et al., 2012; Turkle, 2012; Vergeer & Pelzer, 2009). People may feel lonely when their need to belong is not being met sufficiently (Baumeister & Leary, 1995). Loneliness and dissatisfaction with social networks can lead to further isolation, detachment, and depression (Kross et al., 2013; Park et al., 2016; Ponzetti, 1990).

Depression. Kline stated that depression has caused more human suffering than any other disease in the United States (1964). Beck and Alford define depression manifestations of lowered moods of sadness, apathy, negative self-concept, insomnia, lack of libido, low energy, and desire to escape or die (Beck & Alford, 2009). The prevalence of depression is especially concerning among young people. Studies suggest college students are exposed to situations that may predispose them for psychiatric disorders, or may bring to light previous or worsen pre-existing issues (Ahern, 2009; Blanco, Okuda, Wright, Hasin, Grant, Liu, & Olfson, 2008; Zivin, Eisenberg, Gollust, & Golberstein, 2009). According to statistics from the National College Health Association of 2014, mental health disorders were the largest on college campuses, with 20% of students diagnosed with depression. It is no wonder that suicide rates are one of the top three leading causes of death among students on college campuses (Kisch, Leino, & Silverman, 2005).

Research of CMC has noted discrepancies in results of the effects of online use on depression. One study of Facebook revealed that over time, users expressed more depressive symptoms (Kross et al., 2013; Moreno et al., 2011). Conversely, other recent studies of Facebook found that connection to others on this platform is related to less depression and anxiety, and higher levels of well-being (Grieve, Indian, Witteveen, Anne Tolan, & Marrington, 2013; Wright et al., 2013). The current study seeks to investigate and determine if these inconsistent findings in Facebook are attributable to a surplus or deficit of supportive interactions within support gap types. Pertaining to *negative relational outcomes*, formally stated,

H1: A surplus in nurturant support is inversely associated with negative relational outcomes of (a) perceived stress, (b) social isolation, (c) loneliness, and (d) depression.

H2: A deficit in nurturant support is positively associated with negative relational outcomes of (a) perceived stress, (b) social isolation, (c) loneliness, and (d) depression.

H3: A surplus in action-facilitating support is positively associated with negative relational outcomes of (a) perceived stress, (b) social isolation, (c) loneliness, and (d) depression.

H4: A deficit in action-facilitating support is positively associated with negative relational outcomes of (a) perceived stress, (b) social isolation, (c) loneliness, and (d) depression.

Positive Self-Worth as Esteem Improvement

Another consequence of unmatched support gaps may result in higher levels of self-esteem or self-worth of a person who receives more emotional support than desired when faced with a stressor (High & Steuber, 2014; McLaren & High, 2015). Research has also indicated an individual's level of esteem may decrease when too much informational support is provided when a person experiences a stressor (McLaren & High, 2015). Therefore, in this study I posit self-esteem as a positive effect of unmatched support on Facebook.

Holmstrom (2015) states in a recent study that esteem enhancement is related to a person's feelings of self-worth, and deserving of attention from others, and also related to how person avoids interpersonal relationships, which stem from early life experiences

with attachment. Neff (2011) posits that Facebook users are disposed to inflated and unrealistic high levels of self-esteem, which also correspond to high levels of narcissism and positive well-being. However, individuals with higher levels of self-esteem are also associated with higher levels of well-being (Neff, 2011). For this reason, I position self-esteem as a positive variable of esteem improvement, as previously studied by McLaren and High (2015), and extend this construct for testing in an online platform.

Emotions of Anger and Happiness

Surplus and deficit support gaps may also result in strong emotional outcomes in individuals faced with stress. Therefore, I study the specific *emotions of anger and happiness* as negative and positive emotional outcomes.

As previously mentioned, emotional support may be the most pertinent aspect of social support. I add to the scholarly literature on the effects of surplus and deficit support gaps types by focusing on the less studied emotions of anger and happiness within the optimal matching model. Previous research found that deficit emotional and surplus informational support produced hurt feelings (McLaren & High, 2015). Therefore, I propose the emotions of anger and happiness are also affected by unmatched desires of support gap types. Anger is a powerful emotion, and closely aligned with aggression (hurting or harming others, and arousal in preparation for aggression) and hostility (feelings of injustice and suspicion) (Folstein & Hill, 1999). Since McLaren and High's prior work (2015) resulted in increased hurt from emotional and informational gaps, more research is needed to test for similar results on the stronger emotion of anger, and from the CMC of Facebook.

Relatively few scholars have examined the emotion of happiness as an effect of Facebook use. Kim and Lee (2010) found that more honest self-presentations (instead of less realistic positive presentations) on Facebook led to user perception of more social support, and increased happiness from their Facebook friends. Since McLaren and High's (2015) previous study of over-benefited (referred to as surplus in this study) emotional gaps were associated with greater esteem-enhancement, this current study seeks to determine if surplus emotional gaps on Facebook would also indicate increased happiness. Therefore, I predict that a surplus in nurturant support corresponds with more esteem improvement, less anger, and more happiness. I also predict that a deficit in nurturant support also corresponds with less esteem, more anger, and less happiness. Formally stated,

H5: A surplus in nurturant support is positively associated with (a) esteem improvement, inversely associated with (b) anger, and positively associated with (c) happiness.

H6: A deficit in nurturant support is inversely associated with (a) esteem improvement, positively associated with (b) anger, and inversely associated with (c) happiness.

I further predict that a surplus in action-facilitating support corresponds with less esteem improvement, more anger, and less happiness. I also predict a deficit in action-facilitating support corresponds with less esteem improvement, more anger, and less happiness. Formally stated:

H7: A surplus in action-facilitating support is inversely associated with (a) esteem improvement, positively associated with (b) anger, and inversely associated with (c) happiness.

H8: A deficit in action-facilitating support is inversely associated with (a) esteem improvement, positively associated with (b) anger, and inversely associated with (c) happiness.

The goal of this paper is to explore the effects of *dimensions of nurturant and action-facilitating support* types and *form* of surplus and deficit social support gaps on *negative relational outcomes* (perceived stress, social isolation, loneliness and depression), *esteem improvement*, and *emotions of anger and happiness* on university students. Surplus and deficit support gaps are studied in Facebook usage, within two dimensions (consisting of three types): *nurturant support* and *action-facilitating support*. I explore the quality of online social support gaps experienced by students (not just the amount of social support), and the negative ramifications of social support gaps in student use of Facebook. Are university students getting the online social support they want from Facebook? Do gaps exist in the social support students want and what they receive from their Facebook friends? If gaps exist, do these gaps indicate negative and positive consequences for university students? The dependent variables that will be studied within the context of students' Facebook use are the negative relational outcomes (perceived stress, social isolation, loneliness, and depression), esteem improvement, and emotions of anger and happiness.

Method

Participants

The participants consisted of university undergraduate and graduate students, ranging in ages from 18-59 years old ($M = 21.6$, $SD = 4.59$). The initial sample size consisted of 212 students, but 77 participants declined to answer a majority of the questions, and were excluded from the study. The final sample consisted of 135 participants, with a majority of female students (68.9%). The sample identified as Caucasian ($n = 108$), Mixed ($n = 7$), Hispanic ($n = 5$), African ($n = 5$), Latino ($n = 4$), East Asian ($n = 4$), South Asian ($n = 1$), and Other ($n = 1$). Most of the students indicated their current enrollment was at a private university (88.1%). Class year participants consisted of 13 freshmen, 32 sophomores, 45 juniors, 19 seniors, and 26 graduate students. The students represented universities that were mostly 4-year institutions (96.3%), with most of the graduate students enrolled in a 2-year program ($n = 18$). The size of the universities ranged from 3,600 to 70,000 students, with 85.9% of schools with enrollment of 3500-8000 students. (Refer to Table 1).

Procedure

Participants were recruited from the Communication Department of undergraduate and graduate classes at a small liberal arts college in the southeastern United States, and online through a posting on Facebook to invite currently enrolled collegiate and graduate students at institutes of higher learning located anywhere within the United States. Participants took an online anonymous survey by accessing a link that was emailed to or accessed by participants. This link began with a consent form, and

students were invited to begin the survey. The first question asked students if they were active Facebook users. If so, they were invited to complete the rest of the survey. If they were not active Facebook users, they were asked to discontinue and end the survey. The survey was IRB (institutional review board) approved, and was conducted through the university secure survey software of Qualtrics. The survey was created by a Citi-certified graduate student, approved by faculty, and analyzed with the decision to maintain and ensure quality of the study.

Measures

Demographics and initial questions. First, participants were asked demographic questions including: sex, age, year in college, private or public university, 2- or 4-year undergraduate university, length of graduate program in years (if applicable), university size, and ethnicity. Next, participants were asked to indicate the number of Facebook friends they currently had listed on their Facebook profile. They were instructed to open another internet browser, sign in to Facebook and write down their exact number of friends. Third, subjects were asked to estimate how many of these friends were strong ties (family members, close friends, and intimates). Fourth, participants were asked about their use habits of Facebook, with the open-ended question, “In the past week, how many hours per day (on average) have you spent actively using Facebook?” Finally, participants were asked an open-ended question “Why do you use Facebook?”

Social support gaps. To assess differences between experienced and desired support (gaps), Xu and Burleson’s (2001) Measure of Support Types was used, and all variables were measured by a five-point Likert-type scale (1= *Don’t Receive/Desire at All*; 5 = *Receive/Desire a Great Deal*). This measure was utilized to assess the amount to

which students desired and experienced three types (emotional, network, and informational) of supportive communication from their Facebook friends.

The first 19 statements were administered to students with instructions to associate the particular support from their Facebook friends. Statements were administered to determine the extent to which participants received emotional (seven questions), network (five questions), and informational (seven questions) support from their Facebook friends (such as “Providing you with hope or confidence,” and “Offering to provide you with access to new companions,” and “Giving you advice about what to do”). Reliabilities were calculated and responses were averaged for scales of the three types of support received: emotional ($\alpha = .89$, $M = 2.65$, $SD = .92$), network ($\alpha = .84$, $M = 2.48$, $SD = .98$), and informational ($\alpha = .91$, $M = 2.40$, $SD = .94$).

The next 19 statements were used to determine the extent to which participants desired emotional, network, and informational support from their Facebook friends, (such as “Promising to keep problems you discuss in confidence,” and “Connecting you with people whom you may turn to for help,” and “Analyzing a situation with you and telling you about available choices and options”). Reliabilities were also calculated for scales of the three types of support desired: emotional ($\alpha = .91$, $M = 2.77$, $SD = 1.05$), network ($\alpha = .88$, $M = 2.48$, $SD = .98$), and informational ($\alpha = .94$, $M = 2.50$, $SD = .99$). Items on Xu and Burleson (2001) measurement pertaining to the two remaining support types, esteem and tangible, were excluded and deemed as not important to this study and for time constraints.

The emotional and network scales were combined to form the new variable scale nurturant, and responses were averaged for nurturant support received ($\alpha = .91$, $M = 2.60$,

$SD = .85$), and nurturant support desired ($\alpha = .93$, $M = 2.63$, $SD = .95$). The informational received and desired scales may also be referred to as the action-facilitating received and desired scales.

To calculate the social support gaps in nurturant and action-facilitating, a raw discrepancy score was calculated by subtracting desired support from received support. The range of raw scores was -3.40 to 2.86, and means were between -.06 and .12. These raw scores were used to make two continuous variables to denote surplus support and deficit support. The surplus support gap variables were indicated with a positive score, to designate that individuals received more of the type of support than they desired. The remaining scores were changed to zero to signify no surplus support. The frequencies for each type of support were: 45.2% of participants indicated a surplus in emotional support ($M = .37$, $SD = .53$), 58.5% indicated a surplus in network support ($M = .28$, $SD = .45$), 49.6% of participants indicated a surplus in nurturant support ($M = .28$, $SD = .44$), and 52.6% of participants indicated a surplus in informational (action-facilitating) support ($M = .30$, $SD = .46$).

The deficit variables were calculated in the same method. First, all of the support gap variables were kept with a negative discrepancy score to indicate that individuals desired more support than they received. The other scores were changed to zero to signify no deficit support for that type. Next, the absolute value of the scores was used to simplify interpretation, so that higher scores referred to individuals with the most deficit in the types of support. Frequencies for each deficit support type presented as: 63.7% of participants indicated a deficit in emotional support ($M = .24$, $SD = .46$), 59.3% indicated a deficit in network support ($M = .34$, $SD = .58$), 56.3% of participants indicated a deficit

in nurturant support ($M = .25$, $SD = .47$), and 61.5% of participants indicated a deficit in informational (action-facilitating) support ($M = .22$, $SD = .41$).

Perceived stress. In order to ascertain levels of perceived stress, A Global Measure of Perceived Stress (Cohen et al., 1983) was included in this survey. This scale consists of 14 questions with responses recorded on a 5-point Likert-like scale, 1 (*never*) to 5 (*very often*). Sample questions include “In the last month, how often have you dealt successfully with irritating life hassles?” and “In the last month, how often have you felt that you were on top of things?” Reliability for the scale was measured and responses were averaged ($\alpha = .77$, $M = 2.92$, $SD = .45$).

Social isolation. The Friendship Scale (Hawthorne, 2006) was selected to measure social isolation by recoding answers. This survey measurement consisted of four suggestions to indicate levels of isolation with such sentences, “It has been easy to relate to others,” and “I had someone to share my feelings with.” Responses were on a Likert-like scale of 5 choices, (1= *Almost always*, 5= *Not at all*). Items were recoded for consistency to indicate higher cumulative numbers to correspond to higher degree of social isolation. The time frame included “if these feelings were present within the past four weeks,” (Hawthorne, 2006). Reliability for this scale was measured ($\alpha = .85$, $M = 2.07$, $SD = .79$).

Loneliness. The 20-item UCLA Loneliness Scale (Version 3; Russell, 1996) was used to measure levels of loneliness. This included questions of how often a person felt excluded from groups, how often they lacked a companion, and if they had close friendships (e.g., “How often do you feel that you are no longer close to anyone?”) This scale is considered a unidimensional bipolar construct (Russell, 1996). Measurement is

on a 4-point scale (1= *never*, 4= *always*), with higher values indicating higher feelings of loneliness (Tokunaga, 2012). Reliability was calculated and responses averaged ($\alpha = .89$, $M = 2.20$, $SD = .48$).

Depression. Beck's Depression Inventory-II (BDI-II; (Beck, Steer, & Brown, 1996) was used to measure depression among participants with 10 groups (such as "Sadness," and "Guilty Feelings,") of 4 statements (e.g., "I do not feel sad," to "I am so sad or unhappy that I can't stand it"), and respondents then chose the appropriate statement reflecting their current state of emotion. Higher values on the BDI-II indicate higher depressive state. Reliability was calculated and responses averaged ($\alpha = .90$, $M = 1.52$, $SD = .46$).

Esteem improvement. Rosenberg's Measurement of Self-Esteem (Rosenberg, 1965) was used to measure self-esteem among participants. Since the variable is in a positive variation, the items were coded to reflect esteem-improvement, with higher scores indicating higher esteem improvement. Ten questions were used with a 4-point Likert-like scale, including statements (such as "On the whole, I am satisfied with myself," and "At times I think I am no good at all,") and respondents chose the appropriate statement reflecting current state of self-worthiness. Reliability was calculated. The ten questions in this scale were originally found to have a reliability of $\alpha = .70$. By omitting question 1 "On the whole, I am satisfied with myself," reliability of the scale increased ($\alpha = .90$, $M = 3.18$, $SD = .57$).

Anger. Anger was measured using the Short-Form Buss-Perry Aggression Questionnaire (BPAQ-SF) (Diamond & Magaletta, 2006; Diamond, Wang, & Buffington-Vollum, 2005). Twelve questions were used with items (grouped into

physical, verbal, anger, and hostility), and rated on a 5-point scale from (1= *very unlike me*, to 5= *very like me*). Statements examples include (“I often find myself disagreeing with people,” and “At times I feel I have gotten a raw deal out of life”). Respondents chose the answer best representing their current state of aggression. ($\alpha = .82$, $M = 2.60$, $SD = 1.07$).

Happiness. Happiness was measured using the Subjective Happiness Scale (SHS) (Lyubomirsky & Lepper, 1999). This scale consists of 4 questions which were rated on a 7-point interval scale. Questions and possible answers to one question include (“In general, I consider myself:” “*not a very*,” “*a very happy*,” “*happy person*,” or “*person*”). Another question includes (“Compared to most of my peers, I consider myself:” “*less happy*,” or “*more happy*”). Respondents chose the answer best representing their current state of happiness. Reliability was calculated on all four questions ($\alpha = .77$). By omitting the last question on the scale, reliability increased ($\alpha = .92$, $M = 5.28$, $SD = 1.28$).

Results

Preliminary Analyses

Initially, bivariate correlations were run before testing the hypotheses to gain an overview of the general patterns in the data (see Table 2). All testing results were calculated using the software of IBM SPSS Statistics 24. Perceived stress was positively correlated with desired emotional and nurturant support, and surplus in emotional support in Facebook friend interactions. Loneliness was also positively associated with a surplus of emotional support. Depression was positively associated with: desired emotional and

nurturant support, and surplus of emotional, nurturant, and action-facilitating support. These bivariate correlations are opposite of expectations, as predicted in hypotheses.

Esteem improvement was negatively associated with: a surplus of emotional and nurturant support. Anger was positively correlated to the desired support of network, nurturant, and informational, and the received support of network and informational.

Also, to determine if sex was significant in the results, independent samples *t*-tests were calculated with all study variables (see Table 3 for sex descriptives and statistics). Results indicated a significant difference in the responses from males ($M = 3.14$, $SD = .99$) than females to the emotion of anger ($M = 2.35$, $SD = .1.02$), $t(130) = 4.20$, $p = .000$, $r = .35$. Scores for anger ranged from 1 to 5. From the independent variable list, a significant difference was found in males ($M = 2.48$, $SD = 1.03$) and females for desired emotional support ($M = 2.90$, $SD = 1.05$), $t(133) = -2.18$, $p = .03$, $r = .19$). More results from *t*-tests indicated a significant difference from males ($M = 2.39$, $SD = .94$) and females in scores for desired nurturant support, ($M = 2.74$, $SD = .93$), $t(133) = -2.01$, $p = .05$, $r = .17$). Results also revealed a significant difference in males ($M = 2.39$, $SD = .89$) and females in received nurturant support, ($M = 2.69$, $SD = .87$), $t(133) = -1.97$, $p = .05$, $r = .17$). All other variable *t*-test results did not show a significant difference between sex.

In order to determine predictability with the study variables on anger, we refer to the previous linear regression analyses, in which no findings were significant between received nurturant support and anger. Therefore, the collapsed variable of received nurturant support was separated into the two variables of received emotional and received network support, and a significance was found between received network support and anger ($R^2 = .03$, $F(1, 131) = 4.05$, $p = .05$). Stated more specifically, as more network

support was received, more anger was reported ($\beta = .17, p = .05$). Therefore, a hierarchical multiple regression was used to assess how well received network support predicted reports of anger while controlling for sex, and if these effects varied by sex. Results from step one indicated the two predictors explained 27% of the variance, with sex predictor variance, adjusted $R^2 = .11, F(1, 130) = 17.61, p = .000$, and received network support predictor variance, adjusted $R^2 = .16, F(1, 129) = 8.39, p = .004$. Reports of anger were regressed onto received network support and sex, adjusted $R^2 = .16, F(2, 131) = 13.50, p = .000$. It was found that received network support significantly predicted anger ($\beta = .24, p = .004$), and sex alone significantly predicted anger ($\beta = -.38, p = .000$). On step two, the interaction between received network support and sex was added to the model, $F(3, 131) = 9.42, p = .000, \Delta R^2 = .01, p = .27$. Results showed that individuals that received network support came close to varying by sex on reports of increases of anger by males ($\beta = .54, p = .06$), but not by females ($\beta = -.42, p = .27$).

Hierarchical multiple regression was also used to assess how well desired nurturant support predicted reports of perceived stress while controlling for sex, and if these effects varied by sex. (Desired nurturant support was found to significantly predict perceived stress from earlier linear regression.) Results from step one of the regression indicated the two predictors explained only 5% of the variance, with sex predictor variance, adjusted $R^2 = .01, F(1, 132) = 2.43, p = .12$, and desired nurturant support predictor variance, adjusted $R^2 = .04, F(1, 131) = 5.08, p = .03$. Reports of perceived stress were regressed onto desired nurturant support and sex, adjusted $R^2 = .06, F(2, 133) = 3.79, p = .03$. It was found that desired nurturant support significantly predicted perceived stress ($\beta = .19, p = .03$), but sex did not predict perceived stress ($\beta = .10, p =$

.24). Results indicated that whereas sex alone did not predict perceived stress, when sex was added to the model with desired nurturant support and controlled for, desired nurturant support was still significant regardless if participants were male or female. On step two, the interaction between desired nurturant support and sex was added to the model, $F(3, 133) = 2.60, p = .06, \Delta R^2 = .01, p = .24$. Results showed that individuals that desired nurturant support did not vary by sex on reports of perceived stress, whether male ($\beta = .23, p = .48$), or female ($\beta = -.05, p = .91$).

Earlier linear regression also indicated desired nurturant support predicted depression. Hierarchical multiple regression was used to assess how well desired nurturant support predicted reports of depression while controlling for sex, and if these effects varied by sex. Results from step one of the regression indicated the two predictors explained only 2.3% of the variance, with sex predictor variance, adjusted $R^2 = -.007, F(1, 132) = 0.11, p = .74$, and desired nurturant support predictor variance, adjusted $R^2 = .03, F(1, 131) = 6.29, p = .01$. Reports of depression were regressed onto desired nurturant support and sex, adjusted $R^2 = .03, F(2, 133) = 3.20, p = .04$. It was found that desired nurturant support significantly predicted depression ($\beta = .22, p = .01$), but sex did not predict depression ($\beta = -.10, p = .93$). On step two, the interaction between desired nurturant support and sex was added to the model, $F(3, 133) = 2.60, p = .06, \Delta R^2 = .01, p = .24$. Results showed that individuals that desired nurturant support did not vary significantly by sex on reports of depression whether male ($\beta = .59, p = .08$), or female ($\beta = -.05, p = .24$).

Tests of the Hypotheses

Simple linear regressions were also used for H1a, H1b, H1c, and H1d to assess whether a surplus in nurturant support predicted an inverse relationship to perceived stress, social isolation, loneliness, and depression. H1a, H1b, H1c, and H1d were not supported. However, it is worth mentioning that the results of H1a were close to predicting that an excess of nurturant support led to higher levels of perceived stress ($\beta = .16, p = .08$). Also, although H1d was not supported, results showed that a surplus in nurturant support accounts for a significant amount of variance in reports of depression, $R^2 = .04, F(1, 132) = 5.22, p = .02$. A surplus of nurturant support predicted an increase rather than a decrease of depression in participants ($\beta = .20, p = .02$). Refer to Table 4 for hypotheses regression statistics. (See Table 5 for regression results with negative relational outcomes, and Table 6 for regression statistics for esteem improvement and emotions of anger and happiness.)

Linear regressions also indicated emotional surplus support significantly predicts an increase in perceived stress ($\beta = .27, p = .004$). The amount of surplus emotional support also explained a significant portion of the variance in the amounts of perceived stress $R^2 = .07, F(2, 133) = 4.74, p = .004$. Also, an excess of emotional support was found to significantly predict an increase in loneliness ($\beta = .18, p = .04$). A significant portion of the variance was also explained by a surplus of emotional support in the reports of participant loneliness $R^2 = .03, F(1, 131) = 4.53, p = .04$. A simple linear regression was used to assess whether a surplus of emotional support predicted an increase in depression. Results showed that surplus in emotional support accounts for a significant portion of the variance in reports of depression, $R^2 = .08, F(1, 132) = 10.69, p$

= .001. More specifically, as users of Facebook receive a surplus of emotional support, the users report an increase of depression ($\beta = .27, p = .001$).

H2 posited a deficit in nurturant support is positively associated with negative relational outcomes of (a) perceived stress, (b) social isolation, (c) loneliness, and (d) depression. Bivariate correlations and simple linear regressions indicated no support for H2a, H2b, H2c, and H2d. However, a simple linear regression indicated a close prediction that a deficit in emotional support may lead to less depression ($\beta = -.16, p = .07$), as in contrast to the prediction in H2. Even though the variance is not significantly explained by this interaction, the results are meaningful for this study, $R^2 = .03, F(1, 132) = 3.45, p = .07$.

H3 asserted that a surplus in action-facilitating support is positively associated with negative relational outcomes of (a) perceived stress, (b) social isolation, (c) loneliness, and (d) depression. Although H3a, H3b, and H3c were not supported, results for H3d supported the prediction. A simple linear regression was used to assess whether an excess of action-facilitating support predicted an increase in depression. Results showed that surplus of action-facilitating support accounts for a significant portion of the variance in reports of depression, $R^2 = .04, F(1, 132) = 5.67, p = .02$. More specifically, as surplus in action-facilitating support increases, Facebook users report more depression ($\beta = .20, p = .02$).

H4 predicts that a deficit in action-facilitating support is positively associated with negative relational outcomes of (a) perceived stress, (b) social isolation, (c) loneliness, and (d) depression. Bivariate correlations and simple linear regressions were used to determine that H4a, H4b, H4c, and H4d were not supported.

H5 posits that a surplus in nurturant support is positively associated with (a) esteem improvement, inversely associated with (b) anger, and positively associated with (c) happiness. A simple linear regression was used to assess whether a surplus in nurturant support predicted an increase in esteem improvement. However, as indicated by the bivariate correlation, the regression results were also found to go in the contrasting direction, with higher levels of nurturant support significantly predicting a decrease in esteem improvement ($\beta = -.18, p = .04$). Results showed that surplus in nurturant support accounts for a significant proportion of variance in reports of decreased esteem improvement, $R^2 = .03, F(1, 130) = 4.33, p = .04$. Thus, H5a, H5b, H5c, and H5d were not supported.

H6 presented that a deficit in nurturant support is inversely associated with (a) esteem improvement, positively associated with (b) anger, and inversely associated with (c) happiness. Bivariate correlations and simple linear regressions were conducted to test H6a, H6b, and H6c, and no support was found. However, a simple linear regression was used to investigate desired nurturant support, and results indicated that desired nurturant support predicted anger ($\beta = .22, p = .01$). Results also showed that desired nurturant support accounted for a significant proportion of the variance in reports of anger, $R^2 = .05, F(1, 130) = 6.90, p = .01$. A simple linear regression was also used to investigate received nurturant support, and results indicated also that received nurturant support almost predicted anger ($\beta = .16, p = .06$). Findings indicated that received nurturant support accounted for a significant proportion of the variance in reports of anger, $R^2 = .03, F(1, 130) = 3.50, p = .06$.

Once again, a closer examination of the original variables that combined to form nurturant support revealed a significant prediction with desired emotional support. A simple linear regression revealed findings that desired emotional support predicted anger in participants, ($\beta = .17$ $p = .05$). Results also showed that desired emotional support accounted for a significant proportion of the variance in reports of anger $R^2 = .03$, $F(1, 130) = 3.87$, $p = .05$. The other original variable of nurturant support is network support, and significant results from a simple linear regression predicted reports of anger ($\beta = .25$ $p = .004$). Results showed that desired network support accounts for a significant proportion of variance in reports of anger $R^2 = .06$, $F(1, 130) = 8.79$, $p = .004$. Similarly, a simple linear regression also revealed that received network support predicts reports of anger ($\beta = .17$, $p = .05$). Findings from received network support accounts for a significant proportion of variance in reports of anger $R^2 = .03$, $F(1, 130) = 4.05$, $p = .05$.

H7 asserted that a surplus in action-facilitating support is inversely associated with (a) esteem improvement, positively associated with (b) anger, and inversely associated with (c) happiness. Bivariate correlations and simple linear regressions were calculated to test H7a, H7b, and H7c, and no support was found.

Finally, H8 postulated that a deficit in action-facilitating support is inversely associated with (a) esteem improvement, positively associated with (b) anger, and inversely associated with (c) happiness. Results of simple linear regressions indicated no support for H8a, H8b, and H8c. However, simple linear regressions showed a significant result in participant reports of desired informational support predicted emotions of anger ($\beta = .25$, $p = .004$). Results also showed that desired informational support accounts for a significant proportion of the variance in reports of anger $R^2 = .06$, $F(1, 130) = 8.45$, $p =$

.004. A simple linear regression also showed that participant reports of received informational support significantly predicts anger ($\beta = .20, p = .02$). The amount of received informational support also explained a significant proportion of the variance in the emotion of anger $R^2 = .04, F(1, 130) = 5.24, p = .02$.

TABLE 1. Frequencies and Descriptive Statistics.

		<i>N</i>	<i>M (SD)</i>
Sex	Males	42	1.69 (.47)
	Females	93	
Age			21.62 (4.49)
Race*			2.04 (2.53)
University	Public	15	
	Private	119	
	Unknown	1	
University years	4 year	130	
	Other	4	
University size			8720 (9504)
Facebook friends			1487 (3688)
Facebook strong friends			99 (137)
Daily hours on Facebook			2.60 (3.00)

* Race (1 = Caucasian, 2 = Latino, 3 = Hispanic, 4 = African, 5 = South Asian, 6 = East Asian, 7 = Mixed, 8 = Other).

TABLE 2. Bivariate Correlations.

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15	V16
Desired support																
V1: Emotional		.73**	.94**	.77**	.66**	.48**	.62**	.57**	.49**	.34**	.44**	.33**	-.40**	-.23**	-.36**	-.17*
V2: Network			-.39**	.83*	.52**	.60**	.61**	.59**	.27**	.45**	.41**	.35**	-.32**	-.40**	-.39**	-.27**
V3: Nurturant				.86**	.64**	.57**	.66**	.62**	.41**	.42**	.46**	.36**	-.38**	-.34**	-.40**	-.24**
V4: Informational (A-f)					.63**	.55**	.64**	.72**	.22*	.35**	.31**	.44**	-.24**	-.27**	-.28**	-.26**
Received support																
V5: Emotional						.70**	.92**	.76**	-.10	-.03	-.15	.01	-.26**	.20*	.24**	.23**
V6: Network							.92**	.72**	-.11	-.24*	-.21**	.01	.18*	.38**	.30**	.31**
V7: Nurturant								.80**	-.17*	-.14	-.20*	.01	.24**	.31**	.30**	.29**
V8: Informational									-.10	.01	-.06	-.17*	-.18*	-.21*	-.20*	.34**
Surplus support																
V9: Emotional										.49**	.85**	.47**	-.37**	-.26**	-.35**	-.22*
V10: Network											.84**	.48**	-.26**	-.37**	-.32**	-.27**
V11: Nurturant												.55**	-.33**	-.38**	-.35**	-.27**
V12: Action-facilitating													-.18*	-.21	-.20*	-.34**
Deficit support																
V13: Emotional														.63**	.89**	.61**
V14: Network															.89**	.74**
V15: Nurturant																.74**
V16: Action-facilitating																

* $p < .05$, ** $p < .001$.

TABLE 3. Mean Levels of Supportive Communication.

	Males	Females	Combined	<i>t</i> -test
Desired support				
Emotional*	2.48 (1.03)	2.90 (1.05)	2.77 (1.05)	$t(133) = -2.18, p = .03,$ $r = .19$
Network	2.29 (0.98)	2.57 (0.97)	2.48 (0.98)	
Nurturant*	2.39 (0.94)	2.74 (0.93)	2.63 (0.95)	$t(133) = -2.01, p = .05,$ $r = .17$
Informational (Action-facilitating)	2.33 (0.99)	2.57 (0.99)	2.50 (0.99)	
Received support				
Emotional	2.44 (0.93)	2.74 (0.91)	2.65 (0.92)	
Network	2.33 (0.96)	2.64 (0.88)	2.55 (0.91)	
Nurturant*	2.39 (0.89)	2.69 (0.81)	2.60 (0.85)	$t(133) = -1.97, p = .05,$ $r = .17$
Informational (Action-facilitating)	2.21 (0.91)	2.51 (0.95)	2.42 (0.94)	
Surplus support				
Emotional	0.29 (0.55)	0.41 (0.53)	0.37 (0.53)	
Network	0.26 (0.47)	0.28 (0.44)	0.28 (0.45)	
Nurturant	0.24 (0.47)	0.30 (0.42)	0.28 (0.44)	
Action-facilitating	0.27 (0.41)	0.31 (0.48)	0.30 (0.46)	
Deficit support				
Emotional	0.24 (0.24)	0.25 (0.49)	0.24 (0.46)	
Network	0.30 (0.46)	0.36 (0.62)	0.34 (0.58)	
Nurturant	0.24 (0.38)	0.25 (0.52)	0.25 (0.47)	
Action-facilitating	0.15 (0.29)	0.25 (0.47)	0.22 (0.42)	
Outcomes				
Perceived stress	2.83 (0.38)	2.96 (0.48)	2.92 (0.45)	
Social isolation	2.15 (0.84)	2.04 (0.78)	2.07 (0.79)	
Loneliness	2.28 (0.46)	2.20 (0.49)	2.22 (0.48)	
Depression	1.50 (0.49)	1.53 (0.44)	1.52 (0.46)	
Esteem Improvement	3.18 (0.59)	3.17 (0.57)	3.18 (0.57)	
Anger**	3.13 (0.99)	2.35 (1.02)	2.60 (1.07)	$t(130) = 4.20, p = .000,$ $r = .35$
Happiness	5.13 (1.54)	5.36 (1.13)	5.28 (1.28)	

Note. $N = 135$. Standard deviations are noted in parentheses. Scores for desired, received, surplus and deficit support ranged from 1 to 5. Scores for loneliness, depression, and esteem improvement ranged from 1 to 4. Scores for perceived stress, social isolation, and anger ranged from 1 to 5. Scores for happiness ranged from 1 to 7.

* $p < .05$, ** $p < .001$.

TABLE 4. Hypotheses and Simple Linear Regression Statistics.

	R^2	df	F	β	p
H1. Surplus in nurturant support					
H1a. Perceived stress	.02	(1,132)	3.23	.16	.08
H1b. Social isolation	.00	(1,132)	0.44	.06	.51
H1c. Loneliness	.02	(1, 131)	2.19	.13	.14
H1d. Depression	.04	(1, 132)	5.22	.20	.38
H2. Deficit in nurturant support					
H2a. Perceived stress	.00	(1, 132)	0.17	-.04	.68
H2b. Social isolation	.00	(1, 132)	0.42	.06	.52
H2c. Loneliness	.00	(1, 131)	0.11	-.03	.74
H2d. Depression	.01	(1, 132)	0.94	-.08	.33
H3. Surplus in action-facilitating support					
H3a. Perceived stress	.01	(1, 132)	1.28	.10	.26
H3b. Social isolation	.00	(1, 132)	0.38	.05	.54
H3c. Loneliness	.01	(1, 131)	1.52	.11	.22
H3d. Depression	.04	(1, 132)	5.67	.20	.02*
H4. Deficit in action-facilitating support					
H4a. Perceived stress	.00	(1, 132)	0.19	-.04	.67
H4b. Social isolation	.00	(1, 132)	0.15	.03	.70
H4c. Loneliness	.00	(1, 131)	0.37	-.05	.54
H4d. Depression	.01	(1, 132)	1.40	-.10	.24
H5. Surplus in nurturant support					
H5a. Esteem improvement	.03	(1, 130)	4.33	-.18	.04*
H5b. Anger	.01	(1, 130)	0.87	.08	.35
H5c. Happiness	.00	(1, 130)	0.01	-.01	.93
H6. Deficit in nurturant support					
H6a. Esteem improvement	.00	(1, 130)	0.13	.03	.72
H6b. Anger	.01	(1, 130)	0.93	-.08	.34
H6c. Happiness	.00	(1, 130)	0.41	.06	.52
H7. Surplus in action-facilitating support					
H7a. Esteem improvement	.02	(1, 130)	2.05	-.13	.16
H7b. Anger	.00	(1, 130)	0.12	.03	.73
H7c. Happiness	.02	(1, 130)	2.92	-.15	.09
H8. Deficit in action-facilitating support					
H8a. Esteem improvement	.00	(1, 130)	0.55	.07	.46
H8b. Anger	.01	(1, 130)	1.55	-.11	.22
H8c. Happiness	.01	(1, 130)	0.68	.07	.41

* $p < .05$, ** $p < .001$.

TABLE 5. Regression of Supportive Communication and Negative Relational Outcomes.

	<i>Perceived stress</i>				<i>Social isolation</i>				<i>Loneliness</i>				<i>Depression</i>			
	<i>R</i> ²	<i>F</i>	β	<i>p</i>	<i>R</i> ²	<i>F</i>	β	<i>p</i>	<i>R</i> ²	<i>F</i>	β	<i>p</i>	<i>R</i> ²	<i>F</i>	β	<i>p</i>
Desired support																
Emotional	.08	10.75	.27	.001**	.00	0.43	.06	.51	.01	1.77	.12	.19	.07	9.19	.2	.003**
Network	.01	1.73	.11	.19	.00	0.01	.01	.94	.01	1.48	.11	.23	.02	2.74	.05	.51
Nurturant	.05	6.19	.21	.01*	.00	0.16	.04	.69	.01	1.88	.12	.17	.05	6.44	.2	.01*
Informational (A-f)	.02	3.00	.15	.09	.00	0.09	.03	.77	.01	0.8	.08	.35	.01	1.56	.11	.21
Received support																
Emotional	.02	1.9	.12	.016	.00	0.01	-.01	.94	.00	0.00	.00	.99	.00	0.38	.05	.51
Network	.02	2.33	.13	.13	.01	0.93	.08	.34	.01	1.20	.10	.28	.01	1.93	.12	.17
Nurturant	.11	6.19	.14	.11	.00	0.23	.04	.64	.00	0.34	.05	.56	.01	1.17	.09	.28
Informational (A-f)	.01	1.13	.09	.29	.00	0.03	.02	.86	.00	0.01	.01	.90	.00	0.13	-.03	.72
Surplus support																
Emotional	.07	4.74	.27	.004*	.01	1.19	.09	.28	.03	4.53	.18	.04*	.08	10.69	.27	.001**
Network	.001	0.12	.03	.73	.00	0.44	-.03	.72	.00	0.10	.03	.75	.01	0.77	.08	.38
Nurturant	.02	3.23	.16	.08	.00	0.44	.06	.51	.02	2.19	.13	.14	.04	5.22	.20	.02*
Action-facilitating	.01	1.28	.10	.26	.00	0.38	.05	.54	.01	1.52	.11	.22	.04	5.67	.20	.02*
Deficit support																
Emotional	.01	0.92	-.08	.34	.00	0.16	-.04	.69	.00	0.37	-.05	.54	.03	3.45	-.16	.07
Network	.00	0.20	.04	.65	.00	1.26	.10	.27	.00	0.01	-.01	.93	.00	0.01	.01	.93
Nurturant	.00	0.17	-.04	.68	.00	0.42	.06	.52	.00	0.11	-.03	.74	.01	0.94	-.08	.33
Action-facilitating	.00	0.19	-.04	.67	.00	0.15	.03	.70	.00	0.37	-.05	.54	.01	1.40	.70	.24

(A-f) = Action-facilitating. **p* < .05, ***p* < .001.

TABLE 6. Regression of Supportive Communication on Esteem Improvement and Emotions of Anger and Happiness.

	<i>Esteem Improvement</i>				<i>Anger</i>				<i>Happiness</i>			
	<i>R</i> ²	<i>F</i>	β	<i>p</i>	<i>R</i> ²	<i>F</i>	β	<i>p</i>	<i>R</i> ²	<i>F</i>	β	<i>p</i>
Desired support												
Emotional	.02	1.95	-.12	.17	.03	3.87	.17	.05*	.00	0.01	-.01	.93
Network	.01	1.61	-.11	.21	.06	8.79	.25	.004**	.00	0.04	-.02	.84
Nurturant	.02	2.05	-.13	.15	.05	6.90	.22	.01*	.00	0.05	.02	.88
Informational (A-f)	.01	0.94	-.09	.34	.06	8.45	.25	.004**	.00	0.02	-.01	.90
Received support												
Emotional	.00	0.00	.00	.99	.02	10.75	.13	.15	.00	0.04	-.02	.63
Network	.00	0.43	-.06	.51	.03	4.05	.17	.05*	.00	0.00	.00	.94
Nurturant	.00	0.12	-.03	.73	.03	3.50	.16	.06	.00	0.05	.02	.82
Informational (A-f)	.00	0.00	.00	.99	.04	5.24	.20	.02*	.01	1.16	.09	.28
Surplus support												
Emotional	.02	5.26	-.20	.02*	.01	0.60	.07	.44	.00	0.00	.00	.99
Network	.01	1.12	-.09	.29	.01	1.15	.09	.29	.00	0.04	.02	.83
Nurturant	.03	4.33	-.18	.04*	.01	0.87	.08	.35	.00	0.01	-.01	.93
Action-facilitating	.02	2.05	-.13	.16	.00	0.12	.03	.73	.02	2.92	-.15	.09
Deficit support												
Emotional	.00	0.35	.05	.55	.00	0.43	-.06	.51	.01	1.34	.10	.25
Network	.00	0.08	.03	.78	.01	0.84	-.08	.36	.00	0.18	.04	.68
Nurturant	.00	0.13	.03	.72	.01	0.93	-.08	.34	.00	0.41	.06	.52
Action-facilitating	.00	0.55	.07	.46	.01	1.55	-.11	.22	.01	0.68	.07	.41

(A-f) = Action-facilitating. **p* <.05, ***p* < .001.

Discussion

Based on the literature review, computer-mediated communication on social networking sites has changed the landscape for support-seeking behavior online. Due to the vast numbers of heterogeneous people that can be reached in a timeless fashion on social network sites, supportive communication has become increasingly more complex. The goal of this study was to parse out some of these complexities by examining whether student users of Facebook were getting the support they wanted. At a broad level, this study made note of the differences between unmatched social support, in surplus and deficit social support gaps and the effects of these gaps on negative relational outcomes, esteem improvement, and the emotions of anger and happiness. Building on existing research of support gaps, one of the purposes of this study was to extend knowledge of surplus and deficit support by types to the platform of Facebook.

Supported hypotheses. Results showed the gap between the support people desired and what they received on Facebook use was associated with negative outcomes dependent on the type of support, and whether the gap was a surplus or deficit. The only hypothesis that was supported in this study was H3d, in which the surplus of action-facilitating support in student use of Facebook predicts an increase in depression. Also of note is the relative small effect size of the significance. Previous research has indicated that too much information or advice may increase a recipient's distress (Feng & MacGeorge, 2010; MacGeorge, Guntzviller, Hanasono, & Feng, 2016). A person that receives a surplus of unwanted advice when faced with a stressor may feel rejected, minimized, ignored, or feel that their coping ability has been undermined, which creates more distress (Servaty-Seib & Burleson, 2007). Much of the previous research on support

gaps has dealt mainly with face-to-face relationships. Recent studies have shown negative outcomes from an abundance of unwanted advice online and within social networking sites (Rainie & Wellman, 2012; Valkenburg & Peter, 2009) and in providing unhelpful supportive attempts to a person in bereavement (Servaty-Seib & Burleson, 2007). Also of note is the reported the number of Facebook friends ($M = 1481$) in this sample indicated a large network. This abundance of friends may easily offer an unwanted amount of advice or information in response to a user's post or comment.

Significant findings in support gaps. A surplus in nurturant support gaps was found to significantly predict depression and lowered esteem improvement, which was in the opposite direction than projected. Upon closer examination, desired nurturant support led to an increase in perceived stress, depression and anger. Received nurturant support was also shown to predict anger. These contrasting findings reveal the complexities and differences of supportive communication within the contained online platform of Facebook as opposed to face-to-face communication. A surplus of emotional gaps predicted the most negative outcomes: perceived stress, loneliness, depression, and negative esteem improvement. Even desired emotional support predicted perceived stress, depression, and anger. Desired and received network support gaps also predicted a negative outcome of anger. All of these significant findings resulted in very small effect sizes.

Implications and Future Research

At a broad level, this study explores six explanations for why a surplus in nurturant support gaps, and specifically a surplus in emotional support gaps predicted negative outcomes in student use of Facebook. The vast differences in communication

within the Facebook platform and communication in a face-to-face environment are complex and plentiful. First, merit was found in boyd's interpretation of social networking sites as "networked publics" (boyd, 2007, p.119) where interaction is for users to navigate identities, social status, culture, and public life. boyd proposes four properties that exist in social network sites that normally do not exist in the face-to-face public: "persistence, searchability, replicability, and invisible audiences" (boyd, 2007, p. 120). Information online is easily reproduced, shared, and searched, but problematic to permanently delete. The audience a Facebook user targets can be radically larger and more diverse than intended, and a person's image may be tarnished by the swiftness of information sharing with no boundaries. Persistence is evidenced by recordings of photos or videos, and searchability has magnified immensely with each technological advancement. The replicability of photos enables fine alteration of original images in copies, and the online platform of Facebook contains an audience that one would most likely never see in entirety, or at all. If one's audience in Facebook is invisible, one's empathetic communication is diminished, as opposed to understanding which friend may be sensitive to a certain issue in face-to-face contexts and communicating in a way to not offend. If empathy is impossible to apply to an unknown or invisible audience, negative attitudes may ensue. In the face-to-face world, our social dynamics are such that we know who comprises our audiences, and we can tailor our interactions to a specific person or group of people. However, on Facebook, our public audience has changed in scale, and the entire world may now see our photos and videos, in almost limitless space and time (boyd, 2007). Emotional support within a networked public may be nuanced and minimal, and a surplus could potentially be magnified grossly and at great speeds.

The second broad explanation pertains to the heightened distortions of impression-making on Facebook. Each user has total control over the careful construction of her profile, from the cropped selection of the best photo to the crafting of interests and selection of friends, and therefore leaving an optimal better impression on others (Chou & Edge, 2012). The negative ramifications from the ideal, most appealing online persona represented on a user's profile is that readers view photos, posts, and videos, and interpret the ideal person as normal, happier and better than themselves. In face-to-face settings, and in close relationships, we know our friends are normal, in that they deal with the typical ups and downs in life. However, with the large average number of Facebook friends indicated from the current study, one may question how many Facebook friends are actually authentic, and as close as one's offline friends. Therefore, I argue that viewing photos and videos of friends on Facebook predicts jealousy, and envy, and encourages negative self-comparisons. Thus, "Facebook envy" may account for a surplus of nurturant and emotional support gaps' predictions of higher levels of negative outcomes, including lowered esteem and stronger emotions of anger. Perhaps empathy may be a worthwhile construct to study, as well as questioning the link of Facebook friendships to their offline network as a method to provide more understanding of the effects of gaps in supportive interactions in the use of Facebook.

I offer a third justification for the negative ramifications for surplus nurturant and emotional support gaps with the absence of nonverbal cues in Facebook communication. This reasoning is closely related to distorted impressions online, because we are deprived of facial expressions, body positions, friendly touch, hand-holding, and the other person's actual presence. The implications of communication in the absence of nonverbal cues

implies a less intimate connection. Facebook interactions may lead to shallower relationships, and less fulfilling support (Chen & Lee, 2013; Mehdizadeh, 2010). Therefore, an abundance of nurturant support from a surface-level friend may not be welcomed, and may lead to negative outcomes, lowered esteem and strong emotions, such as anger.

The fourth explanation is “communication overload,” (Chen & Lee, 2013, p. 129), which one may experience by becoming overloaded with too much detailed information by an immense amount of intricate communication feedback from a variety of sources, and numerous channels in a quick amount of time. Being overwhelmed in communication overload leads to less motivation, stress, depression, and physical and mental sluggishness (Chen & Lee, 2013). I argue that this construct of communication overload readily applies to usage of the platform of Facebook, and corresponds to a surplus of nurturant and emotional support.

The fifth offer of reasoning to the negative ramifications from surplus in nurturant and emotional gaps may reside in the quality of support, instead of the quantity. The scale chosen in this study for indicating the received support that exceeds or falls short of desired amount of support measures the quantity of support instead of specifically measuring the quality of support (Xu & Burleson, 2001). The quality of support received may be independent of the amount of support received, such that emotional support from Facebook friends who are indeed strangers to the receiver may be unwanted in any amount, and the amount of emotional support from close friends and family members may be the most desired, or of higher quality support. These differences were not accounted for in this study. Whereas the amount of supportive interaction may be

matched in the amount of support desired and received, I argue that the quality of this amount may not correspond to the matched quantity. Perhaps the measurement chosen for this study could have been more adapted to the unique online Facebook platform, to measure subtleties in quality over quantity of support.

Finally, the six element for discussion in the contrasting findings of negative outcomes and emotion relates to the overall nature of the computer-mediated-communication within Facebook. The comments, photos, and videos shared and viewed may not have focused on one recipient in all interactions. This study combined results of one-on-one interactions and interactions shared with a vast network of people. However, in face-to-face communication, we may desire support from one person, such as an intimate, best friend, or family member. By grouping all of the results from supportive communication into a combination of dyadic and large magnitudes of people, one may assume that the results are more heavily indicative as stemming from large numbers of individuals. Therefore, receiving a surplus of nurturant support is more plausible. Future research may study one-on-one interactions separate from group interactions in effects of surplus and deficit support gaps.

Sex differences in support gaps. The significant results for females and desired nurturant and emotional support is not surprising, as societal expectations for females may be skewed for females to be more emotionally expressive, and more nurturing (e.g., childbirth and child rearing). The differences in reports of desired nurturant support for females were found not to be significant when controlling for sex in predictions of perceived stress and depression. However, the higher number of females in the study may have skewed these initial results, and future studies should be mindful of accessing a

larger random sample with more equal sex representations. The anger significance for males independent of the study variables is interesting. One explanation may be offered in the societal encouragement and higher regard of the strong male. Anger in men may be a sign of strong leadership. Strength in males is valued and rewarded in our society in the competitive nature of the work environment, with most individuals regarding strength as a desirable masculine trait. Strong men may also have biological underpinnings in efforts to win over the best female companion for procreation. Also, the power and strength of men in the competitive sport arena are highly regarded. The male athlete who fights his opponent on the other team and the male who fights his competitor for a love interest are heralded. The male stereotype is apparent in the significant results in this study of more males associated with the emotion of anger in Facebook usage.

Unsupported deficits in support gaps. No deficits were significant in this study, but this finding merits an opportunity to understand why no connection existed between a deficit of social support gaps on Facebook use and negative or positive outcomes.

I offer that the use of the Facebook platform, whether actively posting and sharing or merely viewing photos, texts, or videos may be so immense that any supportive communication is amplified greatly, and may provide just enough support or may easily be too much support. If a Facebook user desires nurturant or action-facilitating support, she may post text or a photo on her status update, or post a comment on a friend's post. Perhaps the simple act of posting to her network of friends (and possibly to friends of friends) acknowledges, affirms, and satisfies the desired support. If she posts about her stressor or problem, she is actively seeking support from an invisible audience as if on a stage. I posit that this act of posting may provide some of the affirmation of support

received, even in the absence of likes or comments because she is projecting her needs to the invisible masses which may satisfy some of her supportive desires. Also, the Facebook user who seeks support by scrolling through her news feed without posting or commenting may still absorb some of the various multitudes of information from friends' updates, comments, selected news articles, and recipes. I suggest that the typical scrolling behaviors of users on Facebook provides some sort of soft support in itself. Therefore, I offer that the design of the Facebook platform as a supportive network site itself serves as a reasoning behind the lack of significant deficit support findings in that a user may gain some social support by merely viewing posts and comments in her news feed.

Strong tie friends. Another finding worth mentioning is the significant relationship between the Facebook friends recognized as “strong tie” friends and received nurturant and network support. Strong tie friendships are defined in this study as family members, close friends and intimates. Facebook friends are defined in this study as the user's total number of friends. The average amount of strong friends reported by users ($M = 99$), compared to the average amount reported of total friends ($M = 1487$) suggests that these stronger friendships may provide the most salient support on this platform, and therefore merit further research to clarify deeper understanding of social support gaps on Facebook. A closer investigation within the differences between strong tie and weak tie friends, and specifically by age groups would be useful in understanding the discrepancies in the results for unmatched support gaps on Facebook, and especially for clarification in the negative effects of surplus of nurturant and emotional support. Further research may also separate intimates, close friends, and family within close tie friendships to determine support gaps and negative or positive outcomes.

Why use Facebook? Some of the responses to this question ranged from “to keep up with friends and family,” to “just be nosey,” “to pass time,” “news,” “funny/entertaining pictures,” “waste time,” “to see what people post,” and to “look at profiles of future acquaintances,” and to see “any major milestones or accomplishments they [friends] have done.” No formal analyses of these responses was conducted for this study but provided a glance into some of the motivations for Facebook usage by students, and confirmed some of the earlier insights for discussion. See Appendix for actual responses from study participants when asked why they use Facebook. Future content analysis may provide more insight into motivation and expectations of desired support within student use of Facebook.

Limitations

This study should be considered within its limitations. The self-reporting of the variables is one limitation, especially with the amount of support desired and received within the context of Facebook, because this study examined the perceptions of support that participants may not have recalled accurately. Future research may include a measurement of support gaps tailored to the subtle nuances of the complex interactions within a networked public. Prior support gap research has been mainly confined to face-to-face communication (High & Steuber, 2014; Matsunaga, 2011; McLaren & High, 2015). Also, perhaps the grouping of family, close friends, and intimates together instead of as separate entities led to results that may not be generalizable. Also, since Facebook friends were not measured as separate sources of strong and weak ties, perhaps the results are misleading. If a future study includes differentiating between strong and weak ties within support gaps in Facebook, care is suggested in preventing study fatigue from an

undesirable length in participation. Also, this study did not initiate a specific stressor in which to respond, which may have provided a limitation in the results. People respond to stress in a myriad of ways, so future research may consider a defined stressor.

The survey was administered to a nonrandom sample of convenience consisting of student population within the United States, so results may not apply to the general public. Future research may explore a random sample, and of larger size than 135, and therefore may be more generalizable to the normal population. Participants consisted of a majority female population, so future research may include a larger sample size, with a more balanced sex population. Also, since the majority participants were of the typical student age, a future study may incorporate an older population for result comparison in support gaps within Facebook use. Recent research indicates that use of Facebook has grown significantly for the older population in the United States, with 56% of adults aged 65 and older reported using Facebook (Duggan, Ellison, Lampe, Lenhart, & Madden, 2015).

The sample size began with 212 participants, but 77 were omitted from the study because these participant responses ended after the 13 demographic and Facebook use questions (several of which were open-ended). Since no responses were recorded for the study measures, none of their answers were included in this study. This large number of participants who did not answer the questions from the measures in the survey may reflect survey fatigue, even though many participants reported 15 to 20 minutes as time spent completing the survey.

Another limitation may include the overall assumption that students use Facebook to obtain nurturant and action-facilitating support. Students may be seeking support via

other social media sites in addition to Facebook, as reports indicate 53% of young adults (ages 18-29) use Instagram (Duggan et al., 2015). Since the results indicated negative outcomes for a surplus of in nurturant and emotional support, and no deficit results were significant, perhaps the underlying reasons for students to post photos and share information on Facebook is varied, and not entirely for supportive communication.

Conclusion

This study extends research on unmatched supportive communication by examining interactions within the most widely used social network site of Facebook. These interactions are highly intricate, and communication on Facebook can lead to an abundance of unwanted support from an abundance of Facebook friends. Since most of the surplus of nurturant, and action-facilitating supportive communication resulted in negative outcomes, perhaps the overall objective use of Facebook should be reimagined. Instead of approaching Facebook use as a trusted source for strong connections and support, maybe the most salient benefits of its use emerge by realizing that interacting with our 1400 Facebook friends is more for our fantasy and entertainment, complete with negative outcomes and emotions that move us like a sad movie.

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Appendix

Quoted Responses to “Why do you use Facebook?”

I use messenger to stay in contact with people. I share links (stories, news) with friends and family.
To keep up-to-date with friends and family I don't see daily, post photos, as a source of news, to look back on past memories, and to update others on my own big life events.
Mostly to keep in touch with people I love who live far away from me
To keep up with old friends
I love the social aspect of Facebook, obviously - particularly photos. I have friend groups in a wide variety of places and in all different walks of life, and I like being able to 'tap in' to all of them at once.
Social communication/connection
I use it to message my friends, post pictures occasionally, and see how other people in my life are doing. I also use it to just be nosey about other people's lives. I don't often post statuses, mostly as a way to stay in contact with other people
Keep in touch with people who I don't live near anymore.
To stay up to date with relevant campus events, department page(s), share articles with like-minded individuals, find articles that I want to read, and see pictures from people.
To see what people who I don't keep in touch with are doing.
I enjoy seeing what's going on with my family and their lives. I also enjoy many of the videos that get shared. I also think that Facebook has become a platform where people can voice their opinions, no matter how ridiculous they may be.
To keep up with my family and friends, whether that is seeing their posts/pictures or through messaging. I often use it to read find trending news articles as well.
To socialize, make plans, schedule events, get support, connect, laugh, entertainment, stay in touch with friends who live in other states or far enough that I can't see regularly
I use Facebook to keep up with family and friends. While I can see the usefulness of professional use of Facebook, I am currently on a Facebook "sabbatical" while I write my thesis.
Entertainment, news, social connection, updating friends and family with my own news, networking with other grads and scholars, social support, self-affirmation, archiving important events and memories, sharing humor, political organization, finding out what's new in my field, sharing fun pictures, the list goes on and on :).
I use Facebook to stay updated on what my friends are doing, to find out about local and community events and happenings, to stay current on news and social issues that are relevant to my friends, to organize and participate in events
Get background on what people are talking about so I can make conversation about popular news stories in life.
Coordinate with friends via Facebook Messenger.
See funny things.

See reminders of friends I have lost contact with and get pleasure from knowing what they are doing in life--especially if they are doing well.
To keep up with friends and family.
To keep up to date with friends, connect politically, and post dog pictures ;) I most often use chat because it's more user friendly than texting.
Provides free access to newspapers and journals. It's also full of memes.
To keep up with people. And when im bored.
To keep in touch with friends
To keep up with relationships. To post photos online. To see what's going on in my hometown.
Keep in touch, see what others are doing, share my life updates
To stay connected to my family and friends. Mainly for news.
I use it for messenger primarily. I occasionally post pictures or look at what other people are doing. If I need to waste time, I get on facebook.
To connect with people
To see what people post. Occasionally I post pictures to prove that sometimes I do things. I almost never post statuses, and I never share (pictures, articles, etc.)
I enjoy looking at pictures of my friends lives and looking at memes or funny videos people tag
To stay updated with relatives, friends, and family and their lives on the daily/weekly basis.
To catch up with what friends are doing, and share my experiences/pictures
Stay connected to others lives. News around the world as well.
Keep up with posts of friends
To stay connected with my friends' lives and the world at large.
to keep in touch with random friends and post pictures in bulk to share with friends and family
I like being connected with my friends and seeing pictures of whats going on in their lives.
To collect my pictures in a digital location and share them with my family and friends.
To keep track of school related social events and keep in touch with high school friends and family.
To keep in touch with people and to pass time
To keep up with friends and family, especially those who I do not see often.
it's fun to share pictures of my friends and I
To see what my friends and acquaintances are up to and to see pictures
Family connection
Good way to contact and keep up with friends
to stay updated on other peoples lives and keep in touch.
To stay in touch with people that I don't see every day. Also to remember people's birthdays

Mostly to read Cosmopolitan articles, but also to post pictures as a way to save them on the internet and to see what other people are up to.
It's a great way to get information from your friends and the world. Also, it is interesting to see what other people's interests are, and it's also nice to explore your own interests
pictures mostly
When I'm bored
To keep in touch with family and friends around the country
To communicate with my family members who live abroad, to keep up to date with my friends from home, to post pictures of my experiences... I occasionally get news from Facebook
There are funny videos and you can post funny things on your friends walls.
to keep up with friends when i don't see them
Entertainment, keeping in touch with family, and getting contacts from my clients.
Originally to keep in touch with friends and see what everyone was up to. Now it's more of to watch food videos and keep my mom updated on my life in college
My family lives out of state so we keep in touch that way.
Mostly to look at pictures and read funny articles or videos people post on my timeline. I typically don't post myself, except mobile uploads from my phone.
I don't
My mother likes to post pictures of my family and Facebook is the only social media platform she uses. I haven't posted on it in a while but I enjoy seeing what is on it.
There are interesting videos and opinions posted that can help widen my horizon of what is going on in the world.
i use facebook to keep up with friends and family, and see how everyone is doing in their respective places in the world
I've lived in several different places and have friends all over the country/world, so I use it to stay up to date with my friends' lives and talk to them.
To interact with others
Too see what other people have been up to. Where they have traveled too.
Because I get bored and it has interesting information on it
To keep up with old friends, my friends and family I do not get to see often, and keep them updated with my life.
I follow news organizations that often give me frequent updates as well as live streams on certain events. I enjoy keeping updated with my friends and seeing what they're up to via pictures or statuses. Additionally, there are a number of funny/entertaining pictures and videos that pop up that help bring some comedy to days that may be stressful.
To stay connected with my friends and family I have met in my past and present!
Keep in touch with family and friends
I use facebook to post pictures and keep tabs on what my friends are up to.
Connect with family and friends

I like it
To stay connected and up to date
Keep up with family and friends
To keep up with people I have met and stay connected to people I don't see on a daily basis.
To stay connected with friends and family.
Following up my favorite bands and keeping contacts with teachers and friends
to keep up with those that I do not get to see as often due to distance/closeness of relationship
Look at friends' photo albums, see memes/funny videos, stay somewhat up to date with political news
To keep in touch with extended family that lives in others states and friends that go to colleges in different states. I also use it to play Words With Friends and Family Feud.
Check what's going on with my friends
For university groups and to keep up with sorority announcements; to put pictures online.
To stay connected to old friends, and to post picture
I use facebook to look up a person before meeting them, to look up a person when a friend mentions them in conversation, to stay in contact with family members abroad, to see pictures of my friends, to post pictures, and to say happy birthday to my closest friends.
Because I enjoy socializing through it
To check on others/news
Funny videos, environmental stuff, feminism stuff
Waste time
Everyone else does. Good platform for publishing content
I like to see what my friends and family are up too and also friends that I may be not as close with a anymore and any major milestones or accomplishments they have done. Things I wouldn't have known if I wasn't otherwise friends with them. I also use it as a place to store and publish most of my pictures. My family members that do no live near me are always encouraging me to post more and they really appreciate seeing what I'm up to.
To look at pictures that friends tag me in, read articles that friends write/share, to see what someone looks like if I do not know them.
I use Facebook to check the news and what my friends are doing.
To stay connected on what is happening in everyone's lives.
To keep up with other people, the news, trends, recipes, etc.
I mostly use it when I'm bored and to keep up with what friends and family are doing.
It's a useful tool for keeping track of what's going on in other peoples' lives.
It's a good way to keep up with the lives of my friends from high school. I also get some of my news from it.

To get news, either world news or local news. to see what my friends are up to. To watch videos that people send me
Just to look at videos.
To keep up with my family
Connect via Messenger
It's fun
I like to look at various cooking videos (Buzzfeed, Tasty) that come up on my newsfeed.
To keep up to date with friends and family
Keep in touch with friends, scroll through friends photos, and look at trending videos to see what everyone I know is doing, for entertainment
For class and to stay connected with old friends
entertainment
Connect with high school friends, mindless distraction
To look up old acquaintances or to look at profiles of future acquaintances (at a new job)
I read the political articles and use the food videos for recipes.
I like to see what my friends are up to and also my acquaintances. I mostly just like to look at the pictures that people post but sometimes i'll read articles that are shared or videos etc
to keep up with what my friends and family are doing, to keep track of events, to keep track of birthdays
It is a good way to connect with others
I use Facebook to keep in contact with my friends, family, etc. It is a good way to stay updated and constantly know what they are doing, where they have been, who they may know (i.e. sharing mutual friends).
I use it in between things, when I am not doing anything else I tend to use it on my phone
news, updates and sports
to keep in touch with friends.
Helps me to keep in connection with friends and family who live all over the world. Also a great platform to keep up to date with social media and pictures!
It is entertaining and I can look at what my friends at other schools are doing
to stay connected with friends, family, and the world
Stay updated with what friends are up to
Do keep up with my friends, see what they are doing. Post pictures, and share funny videos.
I use Facebook currently to do blog posts for a class I am currently taking
To keep in touch with family and friends.

I typically use facebook just to watch random videos and look at pictures that friends have posted

Watch videos

Mainly to look at pictures people post, or to stalk people I don't know that well.
to watch funny videos

I use it to keep up with what my friends, classmates, acquaintances, and family members are doing in their lives

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Presenter

International Association for Communication and Sport 2017

Phoenix, AZ

10th Summit on Communication and Sport

March 30-April 2, 2017

The Killing of the Athletic Female Body: Caster Semenya as Champion

Graduate Student Postdoc Research Day, Biotech Place Conference, WFU Winston-Salem, NC
Poster Presentation for Research Day March 17, 2017

Created poster presentation on thesis: *What You Want vs What You Get: Effects of Social Support Gaps in University Student Facebook Usage*

Teachers, Teaching, and Media Conference, WFU, Benson 401

Winston-Salem, NC

Poster Presentation: Unintentional Learning: Lessons from the Links and Beyond March 3, 2017

Presented poster focusing on the role of learning in movies about sports. The lessons are direct or implicit, but much learning and teaching occurs when having fun. In the movies *Caddyshack*, *Seven Days in Utopia* and *The Karate Kid*, periodic episodes of joy are celebrated between teacher and student in the development of the athlete.

Collaborative Documentary Short Film, WFU

Winston-Salem, NC

Producer, Filming

Fall, 2016

Collaborated on 12 minute documentary film, *Denise's Journey*, with Sam Beckerman, *Film Shooting*, & Luke Dellorso, *Film Shooting, Editing*, under direction of Stokes Piercy, *Assistant Teaching*

Professor

Organized, produced, filmed and colluded with two team members to create documentary of one individual's personal experience fighting poverty within community nonprofit,

The Shalom Project, and Circles WS Initiative; Public screening: Salem College, Winston-Salem, NC, March 8, 2017

Field Study, 2016 Experience at Comic-Con, Wittenberg University

San Diego, CA

Panel Presentation, Comic Arts Conference: The Culture of Comic-Con: Field Study of July 2016

Fans & Marketing

Researched and participated in coursework in an ethnographic field study of Comic-Con, then discussed preliminary findings in panel format to audience of around 40 individuals. Also created final autoethnographic paper: *Deadpool, Zombies, and a Furry: Cosplay in the Carnival*

Graduate Student Criticism Presentation, Von Burg Residence Winston-Salem, NC
Panel Presentation: In a Galaxy Far, Far Away May 4, 2016
Presented rhetorical criticism document to up to 30 WFU communication faculty and peers: *Laser Power of the Female Galactic Golfer*

Graduate Student Presentation to Communication Faculty, WFU Winston-Salem, NC
Thesis Presentation April 13, 2016
Introduced thesis topic in five minute talk to group of around 50 WFU communication professors and colleagues: *Online Social Support: What You Want vs What You Get*

Graduate Student Postdoc Research Day, Biotech Place Conference, WFU Winston-Salem, NC
Poster Presentation for Research Day March 24, 2016
Created poster presentation on current research paper, *Stressed Out: A Study of the Relationship Between Perceived Stress, Social Support, and the Well-being of University Students*

ADDITIONAL HONORS

Selected as co-representative for graduate communication students; duties include attendance to monthly faculty meetings within the Communication Department, and liaison between students and faculty