Facebook and romantic relationships: A daily diary analysis

by

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

The purpose of this study was to examine the effect of daily Facebook communications with one's romantic partner on mood and relationship quality. Undergraduate participants from a large Midwestern university who had been involved in a romantic relationship for a minimum of three months completed 14 daily surveys that measured their daily loneliness, mood, relationship satisfaction, and emotional closeness, as well as communications with their romantic partner and all others on Facebook, in-person, and using other forms of communication. Negative Facebook communications with one's partner significantly predicted more daily loneliness, lower daily positive mood, higher daily negative mood, lower daily relationship satisfaction, and lower daily emotional closeness. Positive Facebook communications with one's partner significantly predicted higher daily relationship satisfaction and emotional closeness. This study presents a first step in providing strong evidence for the importance of the effect of Facebook on mood and relationship quality.

CHAPTER 1

INTRODUCTION

The internet plays a large role in our daily lives, and that role is only increasing over time. Future generations will never know a world without computers, internet, and online interaction. Today's young adults have never lived in a world without the internet. For a majority of those young adults, almost 100% among college students, internet communication includes use of the online social networking site, Facebook. As Facebook has only been open to the non-academic public for a few years we are only just beginning to grasp how individuals act and respond to an environment that ties together the "real" world and the "virtual" world. For many young adults, Facebook is a tool used to communicate with and observe friends, family and even romantic partners. We are just beginning to scratch the surface of the role social media plays in the developing young adult romantic relationship. In fact, most research in the area of Facebook communication views Facebook interactions as something to predict, rather than as a unique form of communication that has the potential to predict individual and couple level outcomes.

This study will focus on the effect of interpersonal Facebook interactions on loneliness, daily mood, relationship satisfaction, and emotional closeness. The first section of this paper will first review social exchange theory as a theoretical backdrop for the proposed research, followed by an introduction to the social networking site Facebook for those readers who are less familiar with the site and its functions. After setting the stage for the proposed study, the benefits and costs of Facebook will be discussed and described in terms of previous research and hypotheses will be made for the effects of daily interactions

through the site on loneliness, mood, and relationship quality. The methods for the study will be detailed along with descriptions of statistical analyses. A brief description of the procedures used to test the hypotheses will be provided, followed by a report of the results. Finally, conclusions, limitations, and future research directions will be discussed at the end of the study.

Social Exchange Theory

The investment model of relationship satisfaction suggests that high relationship satisfaction exists in partnerships with high rewards and low costs (Rusbult, 1983). Individuals who receive a high number or quality of benefits from their relationship and experience limited costs are likely to have higher relationship satisfaction. Among young adults, a fair share of interactions between romantic partners occur online, so it is important to apply this investment model to virtual interactions. If an individual reports more negative than positive online interactions with a partner, his or her relationship satisfaction is likely to suffer. In addition, if that individual reports being on the receiving end of more negative behaviors, like criticism and a lack of support, while providing support and emotional intimacy to his or her partner, he or she is likely to experience a further decrease in his or her relationship satisfaction caused by an imbalance of costs and rewards within the relationship.

Social Networking Sites

To provide background for the current study, it is necessary to understand the importance of Facebook in the lives of emerging and young adults and its uses. Almost all college students have a working knowledge of how Facebook works and it is a significant component of their social lives. For them it is a daily ritual: get up, take a shower, brush your teeth, and check Facebook. Frequent users report that Facebook use is an important part

of their daily lives and plays a large part in their routine and communication with others (Debatin, Lovejoy, Horn & Hughes, 2009). Over the last few years studies performed with emerging and young adults have found that approximately 90-95% of these individuals have a Facebook account (Sheldon, 2008; Ephinston & Noller, 2011), and a majority of those individuals have been using Facebook for at least 2 years (Debatin et al., 2009; Bazarova, 2012). In a study of young adults in the U.S., emerging adults reported using Facebook an average of 19 times per week (Park, Jin , & Jin, 2011) Estimates from Taiwanese students suggest even greater use, using Facebook for 3 hours a day, and an average of 6.58 days per week. A longitudinal study of college students found significant increases in Facebook use and number of Facebook friends within one year (Steinfield, Ellison, & Lampe, 2008). Given trends in social media over the last decade, it is predicted that the proportion of young adults who have a social media profile will increase. The 2012 fourth quarter reports from Facebook estimated 618 million daily active Facebook users and 1.06 billion users that log in at least once per month (Facebook Reports Fourth Quarter and Full Year Results, 2012).

Facebook provides access to as many or as few people as the user would like, in a vast virtual community of acquaintances, activity partners, close friends, complete strangers, family members, and past and present romantic partners. The average Facebook user will turn to the website shortly after meeting someone to "friend" that person. They may never speak to the individual again, either in person or through the website, but that person becomes a part of the audience for any information the user chooses to present on the website. In a racially diverse sample of undergraduates at UCLA, Manago, Taylor, and Greenfield (2012) found that Facebook network sizes varied from 29 to 1200 individuals, with an average of 440 Facebook friends per user. Participants were asked to randomly

select 20 individuals from their friend list and describe their relationships with the selected individuals. The bulk of these networks were comprised of acquaintances, activity partners, and close others. Over one half of "friends" were acquaintances or activity partners that the user did not consider "close." Further analysis found that larger networks of "friends" actually contained a lower proportion of close friends and a larger number of acquaintances and activity partners whom the user did not know well.

Undergraduate students reported that the primary reasons for using Facebook were relationship maintenance (e.g., sending a message to a friend), passing time (e.g., occupying time when bored), virtual community (e.g., to feel less lonely and meet new friends), entertainment (e.g., reading others' profiles), coolness (e.g., having fun), and companionship (e.g., to feel less lonely because you have no one to talk to or be with), with the most important reasons for use being passing time, relationship maintenance, and entertainment (Sheldon, 2008).

One of the most basic components of Facebook is the relationship status, which allows users to report if they are "single," or "in a relationship," "engaged," "married," or if "it's complicated" with another user. In a survey of couples who had been together for an average of less than 2 years where both partners were Facebook members, approximately 80% posted their relationship status on their profile, and a majority of the couples stated that both partners reported being in a relationship on Facebook (Papp, Danielewicz, & Cayemberg, 2012). Higher levels of relationship satisfaction were reported by both partners when the man reported posting his relationship status on Facebook. Displaying one's relationship status on Facebook is colloquially known as going "Facebook official," and men and women have different perceptions of this step in the relationship (Fox &Warber, 2013).

Women are more likely than men to state that going Facebook official represents a serious step in the relationship, which means the couple is now exclusive, stable, and is likely to last through the long-term.

Another way of displaying the relationship on Facebook, other than the very evident relationship status, is through displaying one's partner in a profile picture. In fact, when women reported that they chose to display a profile picture that contained their romantic partner, both partners reported higher relationship satisfaction (Papp et al., 2012). Both the relationship status and a profile picture that includes one's romantic partner openly declare that the profile of the individual you are viewing is in a relationship with another person, potentially acting to discourage alternative partners. According to the investment model, this discouragement of alternatives indicates a higher degree of commitment to a partner. Those couples who choose to openly display these elements of their relationship so publicly also tend to be more satisfied with their relationship (Papp et al., 2012).

The primary goal of the current study is to gain more information about how romantic partners interact on Facebook and use that information to understand the role of social media in determining relationship satisfaction and intimacy. This study will focus on relationship-based interactions on Facebook, specifically interactions between romantic partners. Daily interactions between couples are the primary source of costs and benefits of a relationship, which can determine its overall quality (Rusbult, 1983). With such a large proportion of young adults participating in the social network Facebook, it is increasingly important to understand how these online interactions play out as costs and benefits for the relationship to determine overall relationship quality.

Companionship

This section will explore previous research that has been performed to understand the role of Facebook in connecting the user to his or her social network. More specifically, it will focus on the benefits of computer-mediated communication for individuals who experience anxiety about face-to-face communication, the increased access to social support networks allowed by Facebook, opening of socially acceptable channels for support seeking, and a hypothesis about the impact of positive Facebook interactions on daily loneliness.

One of the most important reasons for Facebook use is companionship (Sheldon, 2008). People who are anxious about face-to-face communication can turn to social networking sites like Facebook to avoid being alone despite their anxiety (Baker & Oswald, 2010). A study of undergraduate instant message users found that more frequent use of online chat functions was correlated with lower levels of reported loneliness and depression and higher levels of happiness (Kang, 2007). Of course, the direction of causality cannot be determined. It is possible that people higher on positive affectivity are simply more social. Findings that more frequent contact between college-age students and parents over social networking sites like Facebook is related to greater loneliness in the student suggest that those who suffer from loneliness are more able to reach out to their support networks when they have moved out of personal contact range (Gentzler, Oberhauser, Westerman, & Nadorff, 2011).

When an individual enters Facebook he or she is faced with a newsfeed, reporting everything that has been recently posted by their network. The top of the page prompts the user to update his or her status by asking, "What's on your mind?" Users can write about what they are doing, who they are spending time with, or what they are feeling in the

moment. The majority of Facebook users endorse the idea that the purpose of the status

update is to convey the user's current emotional state (Manago et al., 2012). If a user is

stressed, it is a simple step to write a status about their stressful situation, and within

moments they are able receive support from Facebook friends through comments,

encouragements, and sympathies, delivered straight to their computer or phone screen. This

socially acceptable form of support seeking gives Facebook users access to their support

systems, no matter the physical distance that may separate members. In this way Facebook

users are able to reap benefits from their relationships quite easily, bolstering the potential for

increased relationship satisfaction and closeness with their partner.

Computer-mediated communication can be particularly beneficial for those who

experience anxiety when communicating with others face-to-face. Desjarlais and

Willoughby (2010) performed a longitudinal study of adolescents, and found that higher

levels of online chatting and using computers to interact with friends were associated with

higher levels of friendship quality over time for both girls and boys. In addition, chatting

online and using computers to interact with friends had a protective effect for individuals

who were high in social anxiety, decreasing the rate at which friendship quality decreased

over time. It is clear that online conversations have an important role in friendship, even in

adolescence. These same benefits should extend to romantic relationships and interactions

between couples on Facebook.

The available data indicate that Facebook is a tool for those who seek companionship

when unable to interact with others face-to-face. It is important to understand how daily

Facebook use affects day-to-day loneliness. If it truly is the useful tool for companionship

that many perceive it to be, frequent interactions on Facebook should decrease a user's feelings of loneliness.

Hypothesis 1: Effects of Facebook Companionship

> *Hypothesis 1:* A high number of positive communications between the participant and his or her romantic partner on Facebook will predict lower daily loneliness.

Relationship Maintenance

Research on benefits of Facebook use in maintaining relationships will be discussed next. This section will include descriptions of studies performed to understand how individuals in close relationships use computer-mediated communication to stay in contact with the important people in their lives, the benefits of using online communication to maintain positive relationships, how intimate interactions occur online, and hypotheses regarding how positive, relationship-maintaining behaviors impact daily mood and relationship quality.

One of the primary functions of a social networking site appears to be connecting with other individuals and developing and maintaining positive relationships. Relationship maintenance is an important function of many social networking sites, including Facebook (Sheldon, 2008). In a study of students in communication studies, Ramirez and Broneck (2009) found that the majority of users utilized instant message techniques to stay in contact with friends and romantic partners. A content analysis of public Myspace interactions between undergraduate students and their contacts over the course of three months revealed that the most common types of interactions were generally positive and supportive (Walker, Krehbiel, & Knoyer, 2009). These messages included primarily friendly greetings, expressions of affection and encouragement, suggestions and confirmations of plans,

personal asides and jokes, exchanges of information and news, and entertainment. Taiwanese students reported that they frequently used Facebook to develop relationships with new friends and maintain relationships with old friends (Hsu, Wang, & Tai, 2011).

Facebook also plays a role in the romantic relationships of young adults. Positive online contact is a useful tool in maintaining relationships between long-distance friends, family members, and romantic partners who are too far apart to see one another frequently (Johnson, Haigh, Becker, Craig, & Wigley, 2008). A study of personal emails written and received by young adults revealed that contact between romantic partners online involved assurances (e.g., "Love you, sweetheart"), openness (e.g., talking about life or emotions), positivity (e.g., well-wishing), talk of social networks (e.g., mutual connections like family and shared friends), and referring to past contact (e.g., conversations, letters, phone calls). A large sample of individuals currently in a heterosexual relationship was asked to complete a survey on their reasons for social media use when communicating with a partner (Coyne, Stockdale, Busby, Iverson, & Grant, 2011). These individuals reported they used online media to express affection for their partner, discuss serious issues, apologize for past wrongdoing, broach confrontational subjects, hurt their partner emotionally, and connect with others while spending time with their partner. Use of social networking sites to communicate with one's partner was much more common among younger individuals and those who had been in a relationship for less than one year, indicating that this type of interaction is particularly important for young adults. Given the benefits demonstrated by online communication between friends, we should expect to see increases in romantic relationship satisfaction over time in couples who maintain positive interactions with one another online.

One of the most important aspects of developing and maintaining relationships is intimacy. Reis (1990) described the process as an exchange between two individuals, in which one discloses personal information to another, the listener then responds in a supportive manner, and the interaction becomes intimate when the discloser feels understood, validated, and cared for as a result of the listener's response to their disclosure. Research has demonstrated that intimate interactions are possible on social media sites such as Facebook, and the effectiveness of these intimate self-disclosures are affected by the method used by the user to disclose their personal information. Facebook offers a variety of means for communication between users who have chosen to "friend" one another on the site, including private messages and chat options, public messages posted to another user's "timeline" or "wall," and public status updates. An experimental study of university students manipulated the perceived intimacy of disclosure (high vs. low) and the method of disclosure (e.g., private message, public wall post, and public status update) to better understand how intimacy is perceived on Facebook (Bazarova, 2012). Private disclosures shared between two users which cannot be seen by others were perceived to be more intimate than public disclosures. In addition, high intimacy information disclosed via public methods was considered less appropriate than all other kinds of disclosures. This indicates that Facebook can be used to develop intimacy, but there are ways of doing so that are more appropriate and useful than others.

Despite understanding the intimacy implications of different types of Facebook communication, there is no consensus on the overall effects of Facebook use on intimacy between romantic partners. In an experimental study of computer-mediated communication, participants were asked to communicate with a confederate in either a face-to-face interaction

or using AOL instant messenger (Jiang, Bazarova, & Hancock, 2011). The confederate was instructed to either disclose low or high intimacy information during the conversation. Participants who interacted with the confederate via instant messenger rated their high-intimacy conversations as more intimate than those who interacted face-to-face. A study of Facebook self-disclosures by students at a large university indicated that it is the frequency and positivity of self-disclosures that predict intimacy, rather than the honesty or intent behind the disclosures (Park, Jin, & Jin, 2011). Social exchange theory would suggest that self-disclosures are a reward within relationships, and a higher number of rewards would increase overall relationship quality.

A fair amount of research has been performed to understand the different types of relationship maintenance behavior that occur on Facebook. However, there is still a need to understand the impact that these interactions have on overall quality of relationships. Most studies conclude that interactions on social networking sites are generally positive and supportive, but do little to investigate the effect of these interactions on the relationship. Based on the investment model, a high number of benefits from the relationship should predict positive outcomes for the relationship and the individual (Rusbult, 1983). A daily diary study of older adults found evidence for a crossover effect between negative and positive events (Rook, 2001). Positive events predicted an increase in positive mood but were unrelated to negative mood, while negative events predicted increases in negative mood and decreases in positive mood.

Hypothesis 2: Effects of Positive Communications

Hypothesis 2P: A high number of positive Facebook communications between the participant and his or her romantic partner will predict higher daily positive mood.

Hypothesis 2R: A higher number of positive Facebook communications between the participant and his or her romantic partner will predict higher daily relationship satisfaction.

Hypothesis 2C: A high number of positive Facebook communications between the participant and his or her romantic partner will predict higher daily emotional closeness.

<div align="center">Facebook Costs</div>

As with all aspects of relationships, benefits are one component of the situation, and I now turn to the costs of Facebook use. This section will review two different types of negative behavior: surveillance and conflict mediated by Facebook. In addition, I will provide hypotheses for how negative interactions on Facebook are related to daily mood and relationship quality.

Despite the positive capabilities of social networking sites to help users keep in touch with family and friends, not all effects of Facebook are positive. When young adults who were currently in a relationship were asked to report how much time their partner spent on Facebook, higher frequency of perceived Facebook use was related to less social, sexual, intellectual, and recreational intimacy (Hand, Thomas, Buboltz, Deemer, & Buyanjargal, 2013). Reports of more negative behavior on Facebook may indicate problems within the relationship that would be reflected in reports of lower relationship quality.

Beyond simple negative interactions playing out on Facebook, there is truly a dark side to the ability to access large amounts of another person's personal information without their knowledge or express permission. Default settings for Facebook can give all Facebook users full access to any information the user chooses to add to his or her personal profile on

the website, including contact information, current location, past and future events affiliated

with the user, and a multitude of pictures. To control access to this information, the user

must adjust privacy settings to only allow certain individuals access to their information.

Unfortunately, the controls for these privacy settings change frequently, becoming more

complicated under the guise of making Facebook more accessible, but serve to allow

Facebook to access a wider variety of people's personal information.   In a study of young

Facebook users, 69% of participants stated that they had not changed their default privacy

settings, and perceived any risks to personal information to affect other Facebook users rather

than their own account (Debatin et al., 2009). Users overwhelmingly stated that the benefits

of Facebook outweighed any risks to personal information they may incur due to Facebook

use. This indicates that users know that there are downsides to Facebook and its potentially

invasive nature, but young adults will continue to use it for the foreseeable future, as it still

provides some of the benefits discussed earlier.

One of the most frequently studied aspects of Facebook is how often people who

know each other may intrude into another user's personal information without the other

person's knowledge. One author concluded that Facebook is not a social networking site, but

rather a social surveillance site (Tokunaga, 2011). Tokunaga found that those who check

Facebook daily and with more confidence in their internet skills reported more frequent use

of interpersonal electronic surveillance techniques, commonly known as "Facebook

creeping."

Participants in a study of relational intrusion reported behavior they had participated

in and received while using Facebook (Chaulk & Jones, 2011). One-third of participants

responded that they had used Facebook to gather information about a former romantic

partner and his or her recent activities, and one-half had attempted to make contact with a former partner. Respondents rarely reported being on the receiving end of such surveillance behavior. This may indicate that there is quite a bit of observation occurring on Facebook that is going undetected by users, as Facebook does not alert users when their profiles have been accessed by other users.

The social surveillance that occurs on Facebook has potential complications for romantic relationships. Prior to such sites, one could not track the friendships and relationships of one's partner, nor observe so many of their interactions. Facebook provides greater access to information for those who may be concerned about potential infidelity. Checking a person's Facebook profile to observe their activities is referred to as "creeping" or "lurking" for a reason. It is the online equivalent of following another person, observing his or her behavior, and hiding in the bushes when he or she turns around. It is virtually undetectable and is considered more socially acceptable than physical, real-world stalking. Utz and Beukeboom (2011) measured partner surveillance behaviors and found that though most of the young adult participants would never consider searching their partner's belongings, emails, or text messages, half of participants reported that they would engage in some online monitoring behavior occasionally and 30% stated that they would monitor their partner's Facebook profile regularly to keep tabs on his or her behavior.

Observation of behavior leads to theorizing in attempts to comprehend the meaning behind a partner's actions. A study of university students found evidence for a feedback loop, in which Facebook users had access to ambiguous and potentially jealousy-provoking information about their partner's interactions. This belief that something unsavory is occurring leads users to turn to the site to track the behavior of their significant other, which

only increases their exposure to jealousy-provoking content (Muise, Christofides, & Desmarais, 2009). Ephinston and Noller (2011) found that this frequent surveillance behavior and consequent jealousy predicted lower relationship quality among young adult users of Facebook.

The feedback loop of access to information, increased use, and subsequent increased exposure to upsetting content is even greater for anxiously attached individuals (Marshall, Bejanyan, DiCastro, & Lee, 2013). A study of daily users of Facebook with a partner who also used the site found that anxious individuals experienced greater Facebook jealousy than more securely attached individuals due to a lack of trust in their romantic partner. Marshall et al., conducted a one-week daily diary study with heterosexual couples and found that anxious attachment predicted increased partner surveillance on Facebook, less commitment, and more jealousy, indicating that anxiously attached individuals did not trust their partner, experienced more jealousy, checked their partner's profile and, as a result, heightened their jealousy over time.

An aspect of Facebook use that is rarely touched upon in the literature is the impact of negative interactions on overall relationship quality. One under-studied aspect of Facebook use is conflict that occurs as a result of Facebook use and its impact on relationship quality. Understanding the role of conflict in Facebook interactions is particularly important in light of previous daily diary studies that have found that interpersonal conflict is one of the most upsetting daily stressors and can account for approximately 80% of the variance in daily mood (Bolger, DeLongis, Kessler, and Schilling, 1989). Among young adults a large number of daily interactions occur online, and it is important to understand the impact of online interactions as well as those that occur face-to-face.

Previous studies have found that romantic conflict can and does occur in an online setting. A study of undergraduates currently involved in a romantic relationship found that computer-mediated communication was used for relationship conflict management when partners were not near enough to one another to have a face-to-face conversation, or when an individual wanted to get his or her point across without being interrupted (Frisby & Westerman, 2010). Individuals who said they were likely to rely on computer-mediated communication during conflict management were less likely to report they had chosen the medium for the benefit of their partner or the relationship, but rather because of a lack of proximity to the partner or the convenience of the ability to engage in the conflict at any time and from any location. In addition, choosing computer-mediated communication for conflict management was associated with more dominating and less integrating and avoiding conflict styles, indicating that those who choose to hash out their relationship difficulties online, instead of in-person, were likely to value themselves over the relationship, which may indicate less relational closeness. Another study of online relationships and conflict management styles among young adults found that intimacy positively predicted more integrating, obliging, and compromising conflict management styles (Ishii, 2010). The negative emotions spawned by Facebook surveillance and the resulting conflict are costs of Facebook that must be balanced against the relationship benefits discussed above. If a high number of negative interactions occur on Facebook, it will predict lower relationship quality.

Hypothesis 3: Effects of Negative Interactions

> *Hypothesis 3P:* A higher number of negative Facebook communications between the participant and his or her romantic partner will predict lower daily positive mood.

Hypothesis 3N: A higher number of negative Facebook communications between the participant and his or her romantic partner will predict higher daily negative mood.

Hypothesis 3R: A higher number of negative Facebook communications between the participant and his or her romantic partner will predict lower daily relationship satisfaction.

Hypothesis 3C: A higher number of negative Facebook communications between the participant and his or her romantic partner will predict lower daily emotional closeness.

<div align="center">Individual Differences and Facebook</div>

This section will review research on a variety of individual differences that influence how people respond to negative interpersonal interactions and provide hypotheses for how selected traits may moderate the relationship between Facebook interactions and daily loneliness, mood, and relationship quality.

People encounter and experience interpersonal interactions in different ways, depending on a myriad of individual differences. Previous daily diary studies have found that neuroticism predicts increased exposure to conflict and more distress in response to negative interpersonal experiences (Bolger & Schilling, 1991; Bolger & Zuckerman, 1995; Suls, Martin, & David, 1998). Evidence for higher reactivity to negative experiences among less emotionally stable individuals suggests that neuroticism will moderate the relationship between Facebook experiences and daily mood and relationship quality.

Hypothesis 4: Neuroticism

Hypothesis 4P: Individuals high in neuroticism will experience larger decreases in

positive mood in response to negative Facebook communications with their romantic

partner.

Hypothesis 4N: Individuals high in neuroticism will experience larger increases in

negative mood as a response to negative Facebook communications with their

romantic partner.

Hypothesis 4R: Individuals high in neuroticism will experience larger decreases in

relationship satisfaction in response to negative Facebook communications with their

romantic partner.

Hypothesis 4C: Individuals high in neuroticism will experience larger decreases in

emotional closeness in response to negative Facebook communications with their

romantic partner.

Previous research has also found that one of the most important personality traits

involved in predicting responses to interpersonal conflict is agreeableness. A daily dairy

study found that agreeable people report encountering less interpersonal conflict, but have a

more negative emotional response to the conflict that they encounter (Suls et al., 1998).

Unlike neurotic individuals, this negative emotional response seems to have little effect on

interpersonal relationships. A study of adolescents asked participants to rate the

appropriateness of several responses to hypothetical conflict situations (Jensen-Campbell &

Graziano, 2001). Participants high in agreeableness reported that physical action, threats,

and undermining the other person's self-esteem in cases of conflict were less appropriate

than those who were low in agreeableness. These differences between individuals with

differing levels of agreeableness led to the prediction that agreeableness would be a significant moderator in the relationship between Facebook interactions and mood.

Hypothesis 5: Agreeableness

> *Hypothesis 5P:* Individuals high in agreeableness will demonstrate larger decreases in positive mood as a response to negative Facebook communications with their romantic partner.

> *Hypothesis 5N:* Individuals high in agreeableness will demonstrate larger increases in negative mood as a response to negative Facebook communications with their romantic partner.

A third personality trait that has been found to predict more intense emotional reactivity in response to negative events is narcissism. A daily diary study of interpersonal interactions found that narcissists reported more negative interpersonal interactions and demonstrated more reactive daily mood (Cheney, Madrian, & Rhodewalt, 1998). Most such studies utilize measures of grandiose narcissism; however, previous research on Facebook conflict has found that hypersensitive, or vulnerable, narcissism is a more successful predictor of negative Facebook interactions than grandiose narcissism. Higher levels of reactivity among more narcissistic individuals led to the prediction that vulnerable narcissism will moderate the relationship between negative Facebook interactions and daily mood.

Hypothesis 6: Vulnerable Narcissism

> *Hypothesis 6P:* Individuals with higher levels of vulnerable narcissism will demonstrate larger decreases in positive mood as a response to negative Facebook communications with their romantic partner.

Hypothesis 6N: Individuals with higher levels of vulnerable narcissism will demonstrate larger increases in negative mood as a response to negative Facebook communications with their romantic partner.

Attachment style plays an important role in how individuals experience relationships and interpret interactions with others (Hazan & Shaver, 1987; Marshall et al, 2013). Eberhart and Hammen (2010) performed a daily diary study and found that anxiously attached individuals experienced more relationship conflict and more distress in response to conflict. We predict that anxious attachment will moderate the relationship between Facebook interactions and relationship quality and mood.

Hypothesis 7: Attachment

Hypothesis 7P: Anxiously attached individuals will demonstrate larger decreases in positive mood as a response to negative Facebook communications with their romantic partner.

Hypothesis 7N: Anxiously attached individuals will demonstrate larger increases in negative mood as a response to negative Facebook communications with their romantic partner.

Hypothesis 7R: Anxiously attached individuals will demonstrate larger decreases in relationship satisfaction as a response negative Facebook communications with their romantic partner.

Hypothesis 7C: Anxiously attached individuals will demonstrate larger decreases in emotional closeness as a response to negative Facebook communications with their romantic partner.

Social support within a relationship has a well-known buffering effect against stressful events, such that individuals with high levels of social support demonstrate fewer negative consequences for relationship and individual outcomes in response to negative events. A daily diary study of older adults found that individuals with high levels of support experienced lower levels of negative responses to stressful daily events (Rook, 2003). I anticipate that social support will have a similar buffering effect on negative responses to negative interpersonal interactions on Facebook for both relationship quality and mood.

Hypothesis 8: Social Support

Hypothesis 8N: Individuals with higher levels of perceived social support will experience smaller increases in negative mood in response to negative Facebook communications with their romantic partner.

Hypothesis 8R: Individuals with higher levels of perceived social support will experience smaller decreases in relationship satisfaction in response to negative Facebook communications with their romantic partner.

Hypothesis 8C: Individuals with higher levels of perceived social support will experience smaller decrease in emotional closeness in response to negative Facebook communications with their romantic partner.

CHAPTER 2

METHOD

Participants

Participants were recruited from the Iowa State University Psychology subject pool. A total of 89 participants were recruited (60 female, 29 male). The only requirements for participation in this study were that the participants be at least 18 years old and have been involved in a romantic relationship for at least three months. The mean age of the sample was 19.36 years (SD = 1.58). The sample was not very diverse, with 82% white, 9% Asian, 4.5% Black or African American, 2.2% Hispanic, and 2.2% other. Within this study, 59 of the 89 (66%) participants completed all 14 dairy surveys

Despite the youth of the sample, there was a wide variety of relationship length from 2 months to 6 years, with a mean of 20.5 months (SD=17.31). The majority of the sample (96.6%) reported being in a dating relationship, as opposed to cohabiting or married. An interesting aspect of this sample was that over one third of participants reported living more than 2 hours away from their romantic partner (34.8%), while 13.5% reported living in the same building or household, 33.7% lived in the same town as their romantic partner, 9% lived within an hour's drive, and 9% lived 1-2 hours from their romantic partner. The demographic questionnaire each participant completed asked each participant how often he or she interacted with his or her romantic partner in-person, and 35.9% reported seeing the partner at least daily, 23.6% reported seeing the partner at least once per week, 27% reported seeing the partner at least once a month, and 13.5% reported to seeing the partner less than

once per month. Within the sample, 65.2% reported they were "Facebook official," meaning those individuals reported their relationship status on Facebook.

Compensation

Participants received a total of 5 SONA research credits for their participation in all 14 days of the diary study. These credits were disbursed based on the number of days the participant remained in the study. One credit was given to the participant for completing the first day of the diary survey, which required more time and effort on the part of the participant than the remaining 13 surveys because participants were required to come into the lab and complete all of the pre-diary measures in addition to the day's diary survey. An additional research credit was granted to the participant if he or she completed 4 of the 14 short daily surveys. The third research credit was awarded when the participant had completed 7 of the 14 daily diary surveys. A fourth research credit was granted for completing 10 of the 14 diary surveys. The final research credit was awarded to the participant when he or she had completed surveys for 13 of the 14 days. In addition, participants who completed all 14 days of diary surveys were given a chance to be randomly selected to receive one of two $50 gift cards to Target to motivate full participation in the study.

Materials and Procedure

Each participant was asked to complete a 14-day daily diary task. Participants were asked to come into the lab to complete the first survey to encourage continued participation in the survey over the next 2 weeks. The first survey of the study included a variety of individual difference measures, as well as the first short daily diary survey. Participants were

asked to report on their Facebook activities and other social encounters over the last 24 hours on the daily diary.

The first day of the diary study asked for basic demographic information about the participant and his or her current relationship, including measures of relationship type (i.e., dating, cohabitating, married), relationship length, distance from partner, and frequency of interactions with the partner. After completing the demographic information the participant was asked to complete a variety of measures, including measures of general Facebook use, an inventory of past Facebook conflict experiences, a Big Five personality measure, the Hypersensitive Narcissism Scale, the Narcissistic Personality Inventory, an adult attachment scale, and a measure of specific social support from the romantic partner. After completing the individual difference measures participants were asked for their email address and completed their first daily diary entry using a computer within the lab.

Individual links for each diary survey were sent to the email address the participant provided during the initial survey. Participants had 24 hours to complete the day's survey before the individual link expired and a new link for the next day was sent. If participants missed a day of the survey they were not allowed to go back and complete it after the fact, but were encouraged to continue with future surveys.

<div align="center">Measures</div>

Pre-Diary Assessment

General Facebook Use. To measure the participant's general Facebook use, the participant indicated the frequency of use for 11 Facebook functions (e.g., chatting, sharing links, following the Facebook activity of friends). Respondents indicated on a 7-point scale (ranging from *never* to *frequently)* the frequency with which they use each function of

Facebook. This measure was reliable (α = .76), indicating that people who use one function

are likely to use others at similar frequency levels.

Negative Interpersonal Facebook Experiences. To measure the participant's frequency of

conflict due to Facebook use, the participant rated the frequency of Facebook conflict with

three different categories of relationships, including friends, his or her romantic partner, and

family members. In addition, the participant was asked to report the frequency of 17 types of

negative Facebook experiences they may have had during their use of the site (e.g., jealousy,

insults, hurt feelings). All items required respondents to indicate the frequency of the

experience type on a 7-point Likert scale (ranging from *never* to *frequently*). Analyses of

present data indicated that this scale is quite reliable (α = .89).

Big Five. To measure the Big Five personality traits (extraversion, neuroticism,

agreeableness, openness, and conscientiousness) participants completed a 40-item version of

the Big Five Personality Inventory (Saucier, 1994). Respondents indicated on a 9-point

Likert scale (*extremely inaccurate to extremely accurate*), the accuracy of a series of traits in

describing their own personality. The scale has good test-retest reliability, *r* = .72.

Cronbach's alpha varied from .68 for emotional stability to .86 for extraversion on these

scales.

Grandiose Narcissism. To measure grandiose narcissism, participants completed a 16-item

short form of the Narcissistic Personality Inventory (Ames, Rose, & Anderson, 2005; NPI-

16). Participants were shown pairs of statements and asked to select the statement that better

represents their personality (e.g. "I like to be the center of attention" or "I prefer to blend into

a crowd").   Ames, Rose, and Anderson found that the NPI-16 was reliable, with an alpha

coefficient of .69, though α=.57 in the current sample.

Vulnerable Narcissism. To measure vulnerable narcissism participants completed the 10-item

Hypersensitive Narcissism Scale (Hendin & Cheek, 1997). Participants indicated the extent

to which they agree with a series of statements on a 5-point scale (*strongly disagree* to

strongly agree). The scale is reliable, with an alpha coefficient of .71 within this sample.

Attachment Style. To measure attachment style, participants completed the 12-item

Experiences in Close Relationships Scale-Short Form (Wei, Russell, Mallinckrodt, & Vogel,

1997; ECR-S). Respondents indicated their level of agreement with a series of statements on

a 7-point Likert scale (*disagree strongly* to *agree strongly*). There is strong evidence for the

reliability of the anxiety ($\alpha = .74$) and avoidance ($\alpha = .71$) subscales of the ECR-S.

Social Support. The Social Provisions Scale-Short Version (Cutrona & Russell, 1987; SPS-S)

was used to measure perceived support. Respondents completed the 10-item measure, which

asked them to indicate the extent to which they agreed with a series of statements about the

availability of support on a 4-point scale from 1 (*strongly disagree*) to 4 (*strongly agree*).

The scale has good internal consistency, with alpha coefficients ranging from .85 to .92 in a

variety of populations, and .79 in this sample.

Daily Diary Measures

Daily Facebook use. To measure participants' daily Facebook use, each night for 14 nights,

participants logged how many minutes they spent on Facebook and the number of times they

checked Facebook during the last 24 hours.

Daily interactions. To measure the participants' daily interactions with individuals other than

the romantic partner, each participant was asked to complete a checklist of 17 potential

interactions with individuals other than his or her romantic partner during the last 24-hour

period. Six of these interactions were Facebook specific (e.g., viewed a friend's timeline,

received a profile/timeline post from a friend). For the other 11 interactions, participants were asked to check if the interaction had occurred on Facebook, in-person, or using other forms of communication such as texting or Skype (check all that apply). The interactions included potentially positive (e.g., posting on another user's wall/timeline, joking, planning activities) and negative (e.g., fighting, intentionally ignoring, criticism) interactions. From here forward, these communications will be referred to as "non-romantic" to distinguish them from communications with the romantic partner.

Daily romantic partner interactions. To measure the participants' daily Facebook interactions with their romantic partner, each participant was asked to complete a checklist of 18 potential interactions that could occur with the romantic partner on Facebook, in-person, or using other forms of communication within the last 24-hour period; participants were asked to check all that applied. There were also six Facebook-specific interactions and an additional two in-person-only interactions. Similar to the overall interactions checklist, there were both potentially positive (e.g., flirting, posted something on partner's timeline, received/gave emotional support) and negative (e.g., fighting, criticizing, intentionally ignoring) interactions between the participant and his or her romantic partner.

Two variables were calculated from the two communications checklist: positive Facebook communications with the partner and negative Facebook communications with the partner. These were calculated by counting the different types of positive and negative Facebook communications that the participant indicated they experienced within the last 24 hours. There were also six control variables calculated from the information provided from the communications checklists: positive in-person communications, negative in-person communications, positive other communications, other negative communications, positive

Facebook communications (non-romantic), and negative Facebook communications (non-romantic). Positive in-person and other communications were calculated by counting the number of the different types of positive communications the participant indicated experiencing within the last 24 hours with the romantic partner and all others. The negative in-person and other communications were calculated by counting the number of the different types of negative communications the participant indicated experiencing within the last 24 hours with the romantic partner and all others. The positive Facebook communications (non-romantic) were calculated by counting the number of positive communications with non-romantic others on Facebook. The negative Facebook communications (non-romantic) were calculated by counting the number of negative communications with non-romantic others on Facebook.

Daily loneliness. To measure daily loneliness, participants completed a 1-item measure of how lonely they felt in the last 24 hours on a 5-point scale, ranging from 1 (*not at all lonely*) to 5 (*extremely lonely*).

Daily relationship satisfaction. To measure daily relationship satisfaction, participants completed a 1-item measure of how satisfied they felt with their romantic relationship during the last 24 hours on a 5-point scale, ranging from 1 (*low satisfaction*) to 5 (*high satisfaction*). This item was pulled from a longer relationship satisfaction scale (Hendrick, 1988).

Daily closeness. To measure daily relationship closeness, participants completed a 1-item measure of how emotionally close they felt to their partner during the last 24 hours on a 5-point scale, ranging from 1 (*not close at all*) to 5 (*very close*).

Daily mood. To measure daily positive and negative affect, participants completed a shortened, 10-item version of the PANAS-X (Watson, Clark, & Tellegen, 1988). To measure

positive affect, the 5 items with the highest loadings on the first dimension of the PANAS-X (enthusiastic, interested, determined, excited, and inspired) were selected. To measure negative affect, the 5 items with the highest loadings on the second dimension of the PANAS-X (scared, afraid, upset, distressed, and jittery) were selected. For each item, the participant was asked to indicate to what extent he or she felt each of the emotions during the last 24-hour period on a 5-point scale, ranging from 1 (*very slightly or not at all*) to 5 (*extremely*). Reliability of each shortened scale was measured using data from the first day of the study, and both scales were reliable, .79 for negative mood and .77 for positive mood.

CHAPTER 3

DATA ANALYSIS

The goal of this study was to examine individual effects of daily Facebook communications between romantic partners on daily loneliness, positive and negative mood, relationship satisfaction, and emotional closeness and the strength of these effects after accounting for other methods of communication. A hierarchical linear modeling (HLM) approach was chosen as the most appropriate statistical analysis technique, given the nature of the data. The model specified that each individual in the sample had his or her own relationship between Facebook communications with his or her partner and the outcome variables. A benefit of this approach is that it does not require participants to provide complete daily diary data; participants were included regardless of the number of daily diaries they completed. Data were analyzed using the statistical software SAS. Each prediction equation included a coefficient for day, number of positive Facebook communications with one's partner, and number of negative Facebook communications with one's partner in the prediction of the daily level of each outcome variable. In addition, the prediction equations included interaction terms between time and each Facebook experience to examine the effect of the experiences on change in the outcomes over time. This allowed for multiple hypotheses with the same outcome variable to be tested within the same analysis. Each prediction also included a series of covariates, including age, sex, relationship status, length of relationship in months, positive and negative Facebook communications with individuals other than the participant's romantic partner, positive and negative in-person communications with the romantic partner and non-romantic others, and other interactions

with the romantic partner and non-romantic others that did not occur on Facebook or in person, including texting, Skyping, etc.

When testing for personality trait moderators of the relationship between negative Facebook interactions and the outcome variables, the prediction equation included an interaction term for negative Facebook interactions and the trait, an interaction between the trait and time to test for effects of the trait on the trajectory of the outcome over time, and a three way interaction term to test how the interaction between negative interactions and the trait impacted change in the outcome over time.

CHAPTER 4

RESULTS

Descriptive statistics for the daily measures and individual difference scales may be found in Table 1. Means for the individual difference measures were compared to normative data for the utilized scales for neuroticism, agreeableness, vulnerable narcissism, anxious attachment, and social support to indicate the extent to which this sample deviates from more normalized samples. Normative means for these five scales may also be found in Table 1. In general, the participants of this sample are less neurotic and more agreeable (Yik & Russell, 2001), lower in levels of vulnerable narcissism (Hendin & Cheek, 1997), less anxiously attached (Wei et al., 2007), and perceive higher levels of social support (Johnson, 2014). Table 2 includes correlations among the key measures, aggregated across days. It should be noted that significant correlations are more plentiful between negative Facebook communications with the romantic partner and the outcome variables than between positive Facebook communications with the romantic partner and the outcome variables. The only significant correlate of positive Facebook communications is with loneliness. Contrary to prediction, positive Facebook communications were positively correlated with loneliness. As expected, negative Facebook communications were positively correlated with loneliness and negative mood and negatively correlated with positive mood, relationship satisfaction, and emotional closeness.

The large number of hypotheses for these data called for multiple hypotheses to be tested within the same model. Analyses will be sorted by outcome variable and tables are labeled to indicate which hypotheses were tested in each model. A list of all hypotheses by

outcome variable may be found in Table 3. Before testing any models, each outcome variable was tested for significant variance between individuals and variance within individuals across time to establish that the following analyses were appropriate. Once the appropriateness of the analyses has been established, the outcome variable was predicted by positive and negative Facebook communications with the participant's romantic partner after controlling for gender, age, relationship status, length of relationship, positive and negative in-person and other communications, and Facebook communications with individuals other than the participant's romantic partner.

<div align="center">Loneliness Model</div>

The first model predicted individual differences in loneliness and change in loneliness over time. Positive and negative Facebook communications with the romantic partner were tested as predictors of daily level of loneliness. The prediction equation also included an interaction between the two types of Facebook communications and time to examine the effect of the predictors on change in loneliness over time. As previously mentioned, the equation for loneliness also controlled for the effect of age, gender, relationship status, length of relationship, number of positive and negative in-person communications, other positive and negative communications, and positive and negative Facebook communications with individuals other than the participant's romantic partner.

Hypothesis 1 predicted that a higher number of positive Facebook communications with one's romantic partner would predict less loneliness. Results for the analysis for Hypothesis 1 may be found in Table 4. After adding all of the covariates listed above, Hypothesis 1 was not supported; positive Facebook interactions with one's romantic partner did not significantly predict lower levels of daily loneliness, $b = .01, p = .82$. In addition,

positive Facebook communications did not predict changes in loneliness over time, $b = -0.01, p = .15$. Negative Facebook communications predicted significantly higher daily loneliness, $b = 0.18, p = .01$, and had no significant effect on change in loneliness over time, $b = 0.00, p = .63$. It should be noted that three of the control variables significantly predicted daily loneliness: positive in-person communications, negative in-person communications, and negative other communications (e.g., phone, email, text messages).

<div align="center">Positive Mood Models</div>

The next series of models predicted individual differences in daily positive mood and change in positive mood over time. The initial prediction equation for positive mood was set up similarly to that predicting loneliness. Positive and negative Facebook experiences with the romantic partner and the full set of covariates were tested as predictors of daily level of positive mood. To predict change in positive mood over time, interactions between positive and negative Facebook communications and time were included in the prediction equation. To isolate the effect of the Facebook communications with the partner, the analyses controlled for the effect of age, gender, relationship status, length of relationship, number of positive and negative in-person communications, other positive and negative communications, and positive and negative Facebook communications with individuals other than the participant's romantic partner.

The first positive mood hypotheses tested were 2P and 3P. Hypothesis 2P predicted that a higher number of positive Facebook communications with the participant's romantic partner would predict a higher level of daily positive mood. Hypothesis 3P predicted that a higher number of negative Facebook communications would predict a lower level of daily positive mood. Results for Hypotheses 2P and 3P may be found in Table 5.

After adding all of the covariates listed above, Hypothesis 2P was not supported; positive Facebook communications with one's romantic partner did not significantly predict higher levels of daily positive mood, $b = .17, p = .25$. In addition, positive Facebook communications did not predict any significant changes in positive mood over time, $b = 0.00, p = .86$. Hypothesis 3P was partially supported. Negative Facebook communications predicted significantly lower daily positive mood, $b = -0.54, p < .05$, but had no significant effect on change in positive mood over time, $b = 0.02, p = .58$. It should be noted that five of the six control variables that measured interpersonal interactions other than positive and negative Facebook interactions with the romantic partner attained significance in the prediction of positive mood (positive and negative in-person communications, positive and negative "other" communications, and negative Facebook communications with friends). Only positive Facebook interactions with friends failed to attain significance.

There were also several individual differences measured during the initial survey, which were hypothesized to moderate the relationship between total negative Facebook interactions and positive mood. Each prediction equation included the main effect of positive and negative Facebook communications with the partner, the main effect of the individual difference variable, an interaction term between the negative communications and the individual difference variable, an interaction term between the individual difference variable and time, and a three-way interaction term between negative Facebook communications, the individual difference variable, and time. In addition, all previously mentioned control variables were included in each analysis.

The first individual difference moderator tested was neuroticism. Hypothesis 4P predicted that higher levels of neuroticism would predict a stronger negative effect of

negative Facebook communications with one's partner on positive mood. Results for Hypothesis 4P may be found in Table 6. After including neuroticism, the interaction terms, and the control variables, Hypothesis 4P was not supported. There was no significant effect of positive Facebook communications, $b = .14, p = .16$. There was no significant main effect of neuroticism, $b = .01, p = .78.$, but there was a significant main effect of negative Facebook communications, $b = -.41, p = .02$ on positive mood. In addition, there were no significant interaction effects between neuroticism and negative communications on the level of daily positive mood or change in positive mood over time. There was also no effect of neuroticism on the trajectory of positive mood over time.

Agreeableness was the next individual difference variable tested for moderation effects. Hypothesis 5P predicted that higher levels of agreeableness would predict a stronger negative effect of negative Facebook communications with one's partner on positive mood. Results for Hypothesis 5P may be found in Table 7. This hypothesis was not supported by the data. After including agreeableness and the interaction terms, there was no significant effect of positive Facebook communications, $b = .14, p = .16$. There was no significant main effect of agreeableness on positive mood, $b = .02, p = .71$, but there was a significant main effect of negative Facebook communications with the partner on positive mood, $b = -.40, p = .03$. There were no significant effects of the interaction between agreeableness and negative Facebook communications on level of daily positive mood or change in positive mood over time. There was also no effect of agreeableness on the trajectory of positive mood over time.

Hypothesis 6P predicted that individuals higher in vulnerable narcissism would have lower levels of positive mood as a result of negative Facebook interactions with their

romantic partner and experience larger decreases in positive mood over time in response to

negative Facebook communications. Hypothesis 6P was partially supported by the data;

results may be found in Table 8. After including vulnerable narcissism and the interaction

terms in the prediction equation, there was no significant effect of positive Facebook

communications on positive mood, $b = .14, p = .15$. There was no significant main effect

of vulnerable narcissism on positive mood, $b = -.10, p = .20$, but there was a significant

main effect of negative Facebook communications with the romantic partner, $b = -.34, \ p = .05$. There was no significant interaction between negative Facebook communications and

vulnerable narcissism on level of positive mood or change in positive mood over time.

Vulnerable narcissism also had no significant effect on the trajectory of positive mood over

time.

The final individual difference variable predicted to moderate the relationship

between negative Facebook communications and positive mood was anxious attachment.

Hypothesis 7P predicted that participants who reported higher levels of anxious attachment

would have lower levels of daily positive mood and experience larger decreases in positive

mood over time in response to negative Facebook interactions. Hypothesis 7P was not

supported by the data; results may be found in Table 9. After adding in anxious attachment

and the interaction terms, there was no significant effect of positive Facebook

communications with one's partner, $b = .15, p = .14$. There were also no significant main

effects of negative Facebook communications, $b = -.34, p = .08$, or anxious attachment,

$b = -.01, p = .93$. There was no significant effect of the interaction between anxious

attachment and number of negative Facebook communications on level of daily positive

mood or change in positive mood over time. Anxious attachment had no significant effect on the trajectory of positive mood over time.

<div align="center">Negative Mood Models</div>

The next series of models sought to predict individual difference in daily negative mood and change in negative mood over time. The predictions for negative mood were set up in the same way as those for loneliness and positive mood. Positive and negative Facebook experiences with one's romantic partner were tested as predictors of daily negative mood. To predict change in negative mood over time, interactions between positive and negative Facebook communications and time were included in the prediction equation. As with the previous analyses, the analyses for negative mood controlled for the effect of age, gender, relationship status, length of relationship, number of positive and negative in-person communications, other positive and negative communications, and positive and negative Facebook communications with individuals other than the participant's romantic partner.

Hypothesis 3N predicted that a larger number of negative Facebook communications with one's romantic partner would predict higher daily negative mood. This hypothesis was supported; results may be found in Table 10. Positive Facebook communications marginally predicted lower daily negative mood, $b = -.25, p = .06$, but number of positive communications had no significant effect on change in negative mood over time. Negative Facebook communications with one's partner significantly predicted higher daily negative mood, $b = 0.61, p = .01$, but there was no significant effect of negative communications on change in negative mood over time. It should be noted that three of the six control variables that measured interpersonal interactions other than positive and negative Facebook interactions with the romantic partner attained significance in the prediction of negative

mood (positive and negative in-person communications, and negative "other" communications).

Several individual difference measures were tested for moderation effects on the relationship between negative Facebook communications with one's partner and negative mood. Each prediction equation included the main effect of positive and negative Facebook communications with the partner, the main effect of the individual difference variable, an interaction term between the negative communications and the individual difference variable, an interaction term between the individual difference variable and time, and a three-way interaction term between negative Facebook communications, the individual difference variable, and time. In addition, all previously mentioned control variables were included in each individual difference moderator analysis.

The first individual difference moderator tested was neuroticism. Hypothesis 4N predicted that higher levels of neuroticism would predict a stronger positive effect of negative Facebook communications with one's partner on negative mood, and larger increases in negative mood over time as a result of negative Facebook communications with one's partner. Hypothesis 4N was not supported by the data; results may be found in Table 11. After including neuroticism and the interaction terms to the prediction equation, there was a significant negative effect of positive Facebook communications, $b = -.23, p = .01$. There was a significant main effect of negative communications, $b = .40, p = .01$, but there was a significant main effect of neuroticism on negative mood, $b = .12, p < .01$. The interaction between neuroticism and negative Facebook communications with one's partner did not have a significant effect on daily negative mood or change in negative mood over

time. In addition, neuroticism had no significant effect on the trajectory of negative mood over time.

Agreeableness was also tested as a potential moderator for the relationship between negative Facebook communications with one's partner and negative mood. Hypothesis 5N predicted that higher levels of agreeableness would predict a stronger positive effect of negative Facebook communications on negative mood, and larger increases in negative mood over time as a result of negative Facebook communications. Hypothesis 5N was not supported by the data; results may be found in Table 12. After including agreeableness and the interaction terms there was a significant negative predictor of negative mood, $b = -.23$, $p = .01$. There was no significant main effect of agreeableness, $b = -.01, p = .87$, but there was a significant main effect of negative communications, $b = .41, p = .01$. The interaction between negative communications and agreeableness had no significant effect on daily negative mood or change in negative mood over time. Agreeableness had no significant effect on the trajectory of negative mood over time.

Hypothesis 6N predicted that higher levels of vulnerable narcissism would predict a stronger positive effect of negative Facebook communications on negative mood, and larger increases in negative mood over time as a result of negative Facebook communications. This hypothesis was not supported by the data; results may be found in Table 13. After including vulnerable narcissism and the interaction terms there was a significant effect of positive Facebook communications with one's partner, $b = -.23, p = .01$. There was no significant main effect of vulnerable narcissism, $b = .11, p = .11$, but there was a significant main effect of negative communications, $b = .39, p = .01$. The interaction between negative communications and vulnerable narcissism had no significant effect on daily negative mood

or change in negative mood over time. Vulnerable narcissism had no significant effect on the trajectory of negative mood over time.

Individuals with high levels of anxious attachment were predicted to experience greater increases in negative mood in response to negative Facebook communications with their romantic partner in Hypothesis 7N. This hypothesis was not supported by the data; results may be found in Table 14. After including anxious attachment and the interaction terms there was a significant effect of positive Facebook communications with one's partner, $b = -.21, p = .01$. There was also a significant main effect of negative communications, $b = .62, p < .01$, and a marginally significant main effect of anxious attachment, $b = .10, p = .07$. There were no significant interactions between negative communications and anxious attachment on the level of negative mood or change in negative mood over time. There was also no significant effect of anxious attachment on the trajectory of negative mood over time.

Hypothesis 8N predicted that high availability of social support would buffer individuals against increases in negative mood in response to negative Facebook interactions and reduce increases in negative mood over time. This hypothesis was not supported; results may be found in Table 15. After including social support, there was a significant effect of positive Facebook communications with one's partner, $b = -.24, p = .01$. There was a significant main effect of negative communications, $b = .53, p < .01$, but there was no significant main effect of social support on negative mood, $b = -.12, p = .26$. There was a marginally significant interaction between negative communications and social support, which may be found in Figure 1, such that individuals with higher levels of perceived social support demonstrated larger increases in negative mood as a result of negative

communications than those who had lower levels of perceived support. An individual one standard deviation above the sample mean on social support would have a non-significant simple slope, $b = 1.0, p = .32$, and the simple slope for an individual one standard deviation below the sample mean on social support was also non-significant, $b = .06, p = .96$. The interaction between negative communications and social support had no significant effect on change in negative mood over time. Social support also had no significant effect on the trajectory of negative mood over time.

<center>Relationship Satisfaction</center>

The fourth series of models sought to predict individual differences in daily relationship satisfaction and change in relationship satisfaction over time. Positive and negative Facebook communications with one's partner were tested as predictors of level of daily relationship satisfaction. To predict change in relationship satisfaction over time, interactions between positive and negative Facebook communications and time were included in the prediction equation. Age, gender, relationship status, length of relationship, number of positive and negative in-person communications, other positive and negative communications, and positive and negative Facebook communications with individuals other than the participant's romantic partner, were controlled for in each equation predicting relationship satisfaction.

The first two relationship satisfaction hypotheses tested were 2R and 3R. Hypothesis 2R predicted that a larger number of positive Facebook communications with one's partner would predict higher daily relationship satisfaction. Hypothesis 3R predicted that a larger number of negative Facebook communications with one's partner would predict lower daily relationship satisfaction. Results for these hypotheses may be found in Table 16. Hypothesis

2R was marginally supported. Positive Facebook communications marginally predicted higher daily relationships satisfaction, $b = .07, p = .05$, but there was no effect of positive communications on change in relationship satisfaction over time. Hypothesis 3R was supported by the data. Negative Facebook communications significantly predicted lower daily relationship satisfaction, $b = -.15, p = .02$, but there was no effect of negative interactions on change in relationship satisfaction over time. It should be noted that four of the six control variables that measured interpersonal interactions other than positive and negative Facebook interactions with the romantic partner attained significance in the prediction of positive mood (positive and negative in-person communications, and positive and negative "other" communications).

Three individual difference variables were tested for moderation effects on the relationship between negative Facebook communications with one's romantic partner and relationship satisfaction, including neuroticism, anxious attachment, and social support. Each prediction equation included the main effect of positive and negative Facebook communications with the partner, the main effect of the individual difference variable, an interaction term between the negative communications and the individual difference variable, an interaction term between the individual difference variable and time, and a three-way interaction term between negative Facebook communications, the individual difference variable, and time. All previously mentioned control variables were included in these analyses.

Hypothesis 4R predicted that more neurotic individuals would report lower levels of daily relationship satisfaction when experiencing negative Facebook interactions with their romantic partner, and would experience greater decreases in relationship satisfaction over

time as a result. This hypothesis was not supported by the data; results for Hypothesis 4R may be found in Table 17. After including neuroticism and the interaction terms, there was a significant effect of positive Facebook communications, $b = .07, p < .01$. There was no significant main effect of neuroticism, $b = -.00, p = .75$, but there was a significant main effect of negative communications, $b = -.17, p =< .01$. The interaction between negative Facebook communications and neuroticism had no significant effect on daily relationship satisfaction or change in relationship satisfaction over time. There was a marginally significant effect of neuroticism on the trajectory of relationship satisfaction over the course of the study (Figure 2), such that individuals higher in neuroticism experienced more rapid decreases in relationship satisfaction over time. An individual who scored one standard deviation above the mean on neuroticism had a simple slope, $b = -.03, p = .91$, and an individual who scored one standard deviation below the sample mean had a simple slope, $b = -.002, p. 99$.

Hypothesis 7R predicted that anxiously attached individuals would show lower levels of daily relationship satisfaction as a result of negative communications on Facebook with their romantic partner, and would also experience greater decreases in relationship satisfaction over time as a result of those negative interactions. This hypothesis was not supported by the data; results may be found in Table 18. After including anxious attachment and the interaction terms there was a significant effect of positive communications on Facebook, $b = .07, p < .01$. There were also significant main effects of negative communications, $b = -.19, p < .01$, and anxious attachment, $b = -.03, p = .01$. The interaction between negative communications and anxious attachment had no significant effect on daily relationship satisfaction or change in relationship satisfaction over time.

There was a significant effect of anxious attachment on the trajectory of relationship satisfaction (Figure 3), such that relationship satisfaction among individual with high levels of anxious attachment decreases faster than individuals with low levels of anxious attachment. The simple slope for an individual one standard deviation above the sample mean on anxious attachment was $b = -.04, p = .88$, and the simple slope for an individual one standard deviation below the sample mean on anxious attachment was $b = .00, p = .99$.

Hypothesis 8R predicted that social support would buffer individuals against the negative effects of negative events, such that individuals with more social support would experience less negative effects of negative Facebook communications on daily relationship satisfaction and smaller decreases in relationship satisfaction over time as a result of negative interactions. The hypothesis was not supported by the data; results may be found in Table 19. After including social support and the interaction terms, there was a significant effect of positive communications, $b = .07, p < .01$. There was no significant main effect of social support on relationship satisfaction, $b = .02, p = .31$, but there was a significant main effect of negative communications, $b = -.17, p < .01$. The interaction between social support and negative communications had no significant effect on daily relationship satisfaction or change in relationship satisfaction over time. Social support had no effect on the trajectory of social support over time.

<div align="center">Emotional Closeness Models</div>

The final set of analyses examines individual differences in daily emotional closeness and changes in emotional closeness over time. Positive and negative Facebook interactions with one's romantic partner were tested as predictors of daily emotional closeness to the partner. To predict change in emotional closeness over time, interactions between positive

and negative Facebook communications and time were included in the prediction equation. Age, gender, relationship status, length of relationship, number of positive and negative in-person communications, other positive and negative communications, and positive and negative Facebook communications with individuals other than the participant's romantic partner, were controlled for in each prediction of relationship satisfaction.

The first two hypotheses for emotional closeness were 2C and 3C. The number of positive Facebook communications with one's romantic partner was predicted to positively predict emotional closeness in Hypothesis 2C. Hypothesis 3C predicted that more negative Facebook communications would predict lower daily emotional closeness. These hypotheses were supported by the data; results may be found in Table 20. Positive Facebook communications with the romantic partner significantly predicted higher daily emotional closeness, $b = .08, p = .02$, but had no significant effect on change in emotional closeness over time. Negative Facebook communications significantly predicted lower daily emotional closeness to one's romantic partner, $b = -.12, p = .05$, but had no significant effect on change in emotional closeness over time. It should be noted that four of the six control variables that measured interpersonal interactions other than positive and negative Facebook interactions with the romantic partner attained significance in the prediction of emotional closeness (positive and negative in-person communications, and positive and negative "other" communications).

Neuroticism, anxious attachment, and perceived social support were hypothesized to be moderators of the relationship between negative Facebook communications with one's partner and emotional closeness. Each prediction equation included the main effect of positive and negative Facebook communications with the partner, the main effect of the

individual difference variable, an interaction term between the negative communications and the individual difference variable, an interaction term between the individual difference variable and time, and a three-way interaction term between negative Facebook communications, the individual difference variable, and time. All previously mentioned control variables were included in these analyses.

Hypothesis 4C predicted that more neurotic individuals would report lower levels of emotional closeness with their partner as a result of negative Facebook communications and would experience greater decreases in emotional closeness after negative Facebook communications. This hypothesis was not supported by the data; results may be found in Table 21. After including neuroticism and the interaction terms there was a significant effect of positive Facebook communications, $b = .07, p < .01$. There was a significant main effect of negative Facebook communications, $b = -.19, p < .01$, and no significant main effect of neuroticism, $b = -0.00, p = .98$. The interaction between neuroticism and negative communications had no significant effect on daily emotional closeness or change in emotional closeness over time. Although small, there was a significant effect of neuroticism on the trajectory of emotional closeness over time (Figure 4), such that emotional closeness decreased at a faster rate over time for individuals high in neuroticism. An individual one standard deviation above the sample mean on neuroticism would have a simple slope of $b = -.03, p = .90$, and an individual one standard deviation below the sample mean on neuroticism would have a simple slope of $b = -.00, p = .99$.

Hypothesis 7C predicted that anxiously attached individuals would report lower levels of emotional closeness when experiencing a higher number of negative Facebook communications with their romantic partner, and would demonstrate larger decreases in

emotional closeness as a result of experiencing negative Facebook communications. This hypothesis was not supported by the data; results may be found in Table 22. After including anxious attachment and the interaction terms there was a significant effect of positive communications, $b = .06, p < .01$. There was a significant main effect of negative communications on emotional closeness, $b = -.20, p < .01$, but there was no significant main effect for anxious attachment, $b = -.01, p = .26$. The interaction between negative communications and anxious attachment had no significant effect on daily emotional closeness or change in emotional closeness over time. There was a very small significant effect of anxious attachment on the trajectory of emotional closeness over time (Figure 5), such that emotional closeness decreased at a faster rate over time for individuals high in anxious attachment. An individual one standard deviation above the sample mean on anxious attachment would have a simple slope of $b = -.05, p = .84$, and an individual one standard deviation below the sample mean on anxious attachment would have a simple slope of $b = .01, p = .98$.

Hypothesis 8C predicted that social support would buffer individuals against the negative effects of negative events, such that individuals with more social support would experience less effect of negative Facebook communications on emotional closeness and smaller decreases in emotional closeness over time as a result of negative communications. This hypothesis was not supported; results may be found in Table 23. After including social support and the interaction terms there was a significant effect of positive communications, $b = .07, p < .01$. There was a significant main effect of negative communications on emotional closeness, $b = -.19, p < .01$, but there was no significant main effect of social support, $b = .03, p = .20$. The interaction between social support and negative Facebook

communications had no significant effect on daily emotional closeness or change in

emotional closeness over time. Also, social support had no significant effect on the

trajectory of emotional closeness over time.

Tables and Figures

Table 1
Descriptives for Predictor and Outcome Variables

Measure	Mean	SD	Range	Normative Mean
Neuroticism	33.74	9.05	15-56	41.36
Agreeableness	60.05	6.39	47-72	55.60
Vulnerable Narcissism	26.69	5.65	10-39	29.23
Anxious Attachment	20.07	6.39	7-35	22.24
Social Support	35.94	3.39	26-40	32.85
Positive Facebook Communications: Partner	0.49	1.51	0-11	
Negative Facebook Communications: Partner	0.16	0.77	0-11	
Daily Loneliness	1.99	1.11	1-5	
Daily Positive Mood	15.45	5.09	5-25	
Daily Negative Mood	9.02	4.17	5-25	
Daily Relationship Satisfaction	3.95	1.08	1-5	
Daily Emotional Closeness	3.83	1.10	1-5	

Note. Means for daily measure are means for the whole sample over all 14 days.

Table 2
Correlations between Predictor, Moderator, and Outcome Variables

Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1.Positive Facebook Communications: Partner	1.00											
2. Negative Facebook Communications: Partner	.53**	1.00										
3.Neuroticism	-.01	.05	1.00									
4. Agreeableness	.00	-.04	-.41**	1.00								
5. Vulnerable Narcissism	-.08**	.01	.35**	-.12**	1.00							
6. Anxious Attachment	.01	.07*	.38**	-.17**	.40**	1.00						
7. Social Support	-.05	-.04	-.18**	.36**	-.10**	-.16**	1.00					
8. Daily Loneliness	.08**	.17**	.16**	-.07*	.24**	.23**	-.14**	1.00				
9. Daily Positive Mood	-.02	-.02	-.02	.07*	-.17**	-.02	.20**	-.32**	1.00			
10. Daily Negative Mood	.00	.14**	.23**	-.13**	.15**	.25**	-.18**	.45**	-.01	1.00		
11. Daily Relationship Satisfaction	-.02	-.16**	-.17**	.17**	-.21**	-.34**	.21**	-.50**	.33**	-.40**	1.00	
12. Daily Emotional Closeness	-.01	-.14**	-.15**	.14**	-.24**	-.30**	.20**	-.43**	.36**	-.29**	.77**	1.00

Note. ** $p < .01$; * $p < .05$; all correlations are aggregated across all 14 days

Table 3
List of Hypotheses by Outcome

Outcome	Number	Hypothesis
Loneliness	1	More positive Facebook communications predict less loneliness.
Positive Mood	2P	More positive Facebook communications predict higher positive mood.
	3P	More negative Facebook communications predict lower positive mood.
	4P	Higher neuroticism will predict larger decrease of positive mood from negative Facebook communications.
	5P	Higher agreeableness will predict larger decrease in positive mood from negative Facebook communications.
	6P	Higher vulnerable narcissism will predict larger decrease in positive mood from negative Facebook communications.
	7P	Higher anxious attachment will predict larger decrease in positive mood from negative Facebook communications.
Negative Mood	3N	More negative Facebook communications predict higher negative mood.
	4N	Higher neuroticism will predict larger increase of negative mood from negative Facebook communications.
	5N	Higher agreeableness will predict larger increase of negative mood from negative Facebook communications.
	6N	Higher vulnerable narcissism will predict larger increase of negative mood from negative Facebook communications.
	7N	Higher anxious attachment will predict larger increase of negative mood from negative Facebook communications.
	8N	Higher social support will predict smaller increase in negative mood from negative Facebook communications.
Relationship Satisfaction	2R	More positive Facebook communications predict higher relationship satisfaction.
	3R	More negative Facebook communications predict lower relationship satisfaction.
	4R	Higher neuroticism predicts larger decrease in relationship satisfaction from negative Facebook communications.
	7R	Higher anxious attachment predicts larger decrease in relationship satisfaction from negative Facebook communications.
	8R	Higher social support predicts smaller decrease in relationship satisfaction from negative Facebook communications.
Emotional Closeness	2C	More positive Facebook communications predict more closeness.
	3C	More negative Facebook communications predict less closeness.
	4C	Higher neuroticism predicts larger decrease in closeness from negative Facebook communications.
	7C	Higher anxious attachment predicts larger decrease in closeness from negative Facebook communications.
	8C	Higher social support predicts smaller decrease in closeness from negative Facebook communications.

Table 4
Romantic Partner Facebook Communications Predicting Loneliness

Predictor	b	se	df	t	p
Sex	-0.06	0.01	84	-0.33	0.74
Age	0.02	0.06	84	0.29	0.77
Relationship Status	-0.24	0.30	84	-0.79	0.43
Length of Relationship	0.00	0.00	84	0.11	0.91
Positive In-person Communications	-0.07	0.01	1037	-8.46	<0.01
Negative In-person Communications	0.05	0.01	1037	3.95	<0.01
Positive Other Communications	0.00	0.01	1037	-0.35	0.73
Negative Other Communications	0.04	0.01	1037	4.41	<0.01
Positive Facebook Communications: Non-romantic	0.01	0.02	1037	0.45	0.66
Negative Facebook Communications: Non-romantic	-0.01	0.05	1037	-0.17	0.87
Day	0.01	0.01	1037	0.83	0.41
Positive Facebook Communications: Partner	0.01	0.04	1037	0.22	0.82
Negative Facebook Communications: Partner	0.18	0.07	1037	2.52	0.01
Day*Positive	-0.01	0.01	1037	-1.42	0.15
Day*Negative	0.00	0.01	1037	-0.48	0.63

Note. Hypothesis 1

Table 5
Romantic Partner Facebook Communications Predicting Positive Mood

Predictor	b	se	df	t	p
Sex	0.53	0.84	84	0.62	0.53
Age	-0.52	0.31	84	-1.67	0.10
Relationship Status	0.88	1.52	84	0.57	0.57
Length of Relationship	-0.03	0.02	84	-1.37	0.18
Positive In-person Communications	0.31	0.03	1038	9.47	<0.01
Negative In-person Communications	-0.22	0.05	1038	-4.66	<0.01
Positive Other Communications	0.17	0.04	1038	4.71	<0.01
Negative Other Communications	-0.12	0.04	1038	-3.08	<0.01
Positive Facebook Communications: Non-romantic	0.28	0.09	1038	3.05	<0.01
Negative Facebook Communications: Non-romantic	0.08	0.18	1038	0.42	0.67
Day	-0.16	0.04	1038	-4.13	<0.01
Positive Facebook Communications: Partner	0.17	0.15	1038	1.15	0.25
Negative Facebook Communications: Partner	-0.54	0.27	1038	-1.99	<0.05
Day*Positive	0.00	0.02	1038	-0.18	0.86
Day*Negative	0.02	0.03	1038	0.55	0.58

Note. Hypotheses 2P and 3P

Table 6
Interaction: Negative Facebook Communications X Neuroticism Predicting Positive Mood

Predictor	b	se	df	t	p
Sex	0.52	0.85	83	0.61	0.54
Age	-0.51	0.31	83	-1.65	0.10
Relationship Status	0.89	1.54	83	0.58	0.56
Length of Relationship	-0.03	0.02	83	-1.38	0.17
Positive In-person Communications	0.31	0.03	1037	9.45	<0.01
Negative In-person Communications	-0.22	0.05	1037	-4.70	<0.01
Positive Other Communications	0.17	0.04	1037	4.70	<0.01
Negative Other Communications	-0.12	0.04	1037	-3.08	<0.01
Positive Facebook Communications: Non-romantic	0.28	0.09	1037	3.04	<0.01
Negative Facebook Communications: Non-romantic	0.07	0.18	1037	0.36	0.72
Day	-0.16	0.04	1037	-4.16	<0.01
Positive Facebook Communications: Partner	0.14	0.10	1037	1.42	0.16
Negative Facebook Communications: Partner	-0.41	0.18	1037	-2.33	0.02
Neuroticism	0.01	0.04	83	0.28	0.78
Negative Communications*Neuroticism	-0.00	0.03	1037	-0.00	0.99
Neuroticism*Day	-0.00	0.00	1037	-0.11	0.92
Negative Communications*Neuroticism*Day	-0.00	0.02	1037	-0.15	0.88

Note. Hypothesis 4P

Table 7

Interaction: Negative Facebook Communications X Agreeableness Predicting Daily Positive Mood

Predictor	*b*	*se*	*df*	*t*	*p*
Sex	0.58	0.87	83	0.67	0.51
Age	-0.51	0.31	83	-1.63	0.11
Relationship Status	0.84	1.53	83	0.55	0.58
Length of Relationship	-0.03	0.02	83	-1.36	0.18
Positive In-person Communications	0.31	0.03	1037	9.45	<0.01
Negative In-person Communications	-0.21	0.05	1037	-4.57	<0.01
Positive Other Communications	0.17	0.04	1037	4.69	<0.01
Negative Other Communications	-0.12	0.04	1037	-3.06	<0.01
Positive Facebook Communications: Non-romantic	0.28	0.09	1037	3.05	<0.01
Negative Facebook Communications: Non-romantic	0.07	0.18	1037	0.37	0.71
Day	-0.16	0.04	1037	-4.18	<0.01
Positive Facebook Communications: Partner	0.14	0.10	1037	1.42	0.16
Negative Facebook Communications: Partner	-0.40	0.18	1037	-2.18	0.03
Agreeableness	0.02	0.06	83	0.38	0.71
Negative Communications*Agreeable	0.01	0.04	1037	0.23	0.82
Agreeableness*Day	-0.00	0.01	1037	-0.55	0.58
Negative Communications*Agreeable*Day	0.00	0.01	1037	0.14	0.89

Note. Hypothesis 5P

Table 8

Interaction: Negative Facebook Communications X Vulnerable Narcissism Predicting Daily Positive Mood

Predictor	*b*	*se*	*df*	*t*	*p*
Sex	0.51	0.84	83	0.61	0.54
Age	-0.45	0.31	83	-1.44	0.15
Relationship Status	0.34	1.57	83	0.21	0.83
Length of Relationship	-0.02	0.02	83	-0.89	0.38
Positive In-person Communications	0.31	0.03	1037	9.51	<0.01
Negative In-person Communications	-0.21	0.05	1037	-4.66	<0.01
Positive Other Communications	0.17	0.04	1037	4.78	<0.01
Negative Other Communications	-0.12	0.04	1037	-2.95	<0.01
Positive Facebook Communications: Non-romantic	0.27	0.09	1037	3.03	<0.01
Negative Facebook Communications: Non-romantic	0.06	0.18	1037	0.31	0.76
Day	-0.16	0.04	1037	-4.18	<0.01
Positive Facebook Communications: Partner	0.14	0.10	1037	1.42	0.15
Negative Facebook Communications: Partner	-0.34	0.17	1037	-1.99	0.05
Vulnerable Narcissism	-0.10	0.08	83	-1.30	0.20
Negative Communications*Vulnerable	-0.04	0.05	1037	-0.83	0.41
Vulnerable*Day	0.00	0.01	1037	0.19	0.85
Negative Communications*Vulnerable*Day	-0.00	0.01	1037	-0.26	0.79

Note. Hypothesis 6P

Table 9

Interaction: Negative Facebook Communications X Anxious Attachment Predicting Daily Positive Mood

Predictor	b	se	df	t	p
Sex	0.49	0.85	83	0.57	0.57
Age	-0.51	0.31	83	-1.66	0.10
Relationship Status	0.86	1.54	83	0.56	0.58
Length of Relationship	-0.03	0.02	83	-1.33	0.19
Positive In-person Communications	0.31	0.03	1037	9.44	<0.01
Negative In-person Communications	-0.22	0.05	1037	-4.66	<0.01
Positive Other Communications	0.17	0.04	1037	4.72	<0.01
Negative Other Communications	-0.12	0.04	1037	-3.05	<0.01
Positive Facebook Communications: Non-romantic	0.28	0.09	1037	3.02	<0.01
Negative Facebook Communications: Non-romantic	0.07	0.18	1037	0.37	0.71
Day	-0.16	0.04	1037	-4.17	<0.01
Positive Facebook Communications: Partner	0.15	0.10	1037	1.49	0.14
Negative Facebook Communications: Partner	-0.34	0.19	1037	-1.78	0.08
Anxious Attachment	-0.01	0.06	83	-0.09	0.93
Negative Communications*Anxious	-0.02	0.03	1037	-0.56	0.58
Anxious*Day	0.00	0.01	1037	0.22	0.83
Negative Communications*Anxious*Day	-0.00	0.00	1037	-0.06	0.95

Note. Hypothesis 7P

Table 10
Romantic Partner Facebook Communications Predicting Negative Mood

Predictor	b	se	df	t	p
Sex	-0.16	0.73	84	-0.21	0.83
Age	-0.32	0.27	84	-1.21	0.23
Relationship Status	-0.70	1.32	84	-0.53	0.60
Length of Relationship	-0.01	0.02	84	-0.53	0.60
Positive In-person Communications	-0.11	0.03	1040	-3.86	<0.01
Negative In-person Communications	0.35	0.04	1040	8.46	<0.01
Positive Other Communications	-0.05	0.03	1040	-1.55	0.12
Negative Other Communications	0.21	0.03	1040	6.16	<0.01
Positive Facebook Communications: Non-romantic	0.01	0.08	1040	0.18	0.86
Negative Facebook Communications: Non-romantic	0.11	0.16	1040	0.69	0.49
Day	-0.09	0.03	1040	-3.03	<0.01
Positive Facebook Communications: Partner	-0.25	0.13	1040	-1.89	0.06
Negative Facebook Communications: Partner	0.61	0.24	1040	2.57	0.01
Day*Positive	0.00	0.02	1040	-0.09	0.92
Day*Negative	-0.03	0.03	1040	-0.96	0.34

Note. Hypothesis 3N

Table 11
Interaction: Negative Facebook Communications X Neuroticism Predicting Daily Negative Mood

Predictor	b	se	df	t	p
Sex	0.00	0.70	83	0.00	0.99
Age	-0.40	0.26	83	-1.56	0.12
Relationship Status	-0.39	1.27	83	-0.31	0.76
Length of Relationship	-0.02	0.02	83	-0.80	0.43
Positive In-person Communications	-0.11	0.03	1039	-3.74	<0.01
Negative In-person Communications	0.34	0.04	1039	8.41	<0.01
Positive Other Communications	-0.05	0.03	1039	-1.55	0.12
Negative Other Communications	0.21	0.03	1039	5.95	<0.01
Positive Facebook Communications: Non-romantic	0.02	0.08	1039	0.25	0.80
Negative Facebook Communications: Non-romantic	0.13	0.16	1039	0.80	0.43
Day	-0.10	0.03	1039	-3.28	<0.01
Positive Facebook Communications: Partner	-0.23	0.09	1039	-2.65	0.01
Negative Facebook Communications: Partner	0.40	0.15	1039	2.69	0.01
Neuroticism	0.12	0.04	83	3.16	<0.01
Negative Communications*Neuroticism	0.01	0.03	1039	0.36	0.72
Neuroticism*Day	-0.00	0.00	1039	-1.13	0.26
Negative Communications*Neuroticism*Day	-0.00	0.00	1039	-0.20	0.84

Note. Hypothesis 4N

Table 12

Interaction: Negative Facebook Communications X Agreeableness Predicting Daily Negative Mood

Predictor	*b*	*se*	*df*	*t*	*p*
Sex	-0.26	0.75	83	-0.35	0.73
Age	-0.34	0.27	83	-1.26	0.21
Relationship Status	-0.64	1.33	83	-0.48	0.63
Length of Relationship	-0.01	0.02	83	-0.51	0.61
Positive In-person Communications	-0.11	0.03	1039	-3.82	<0.01
Negative In-person Communications	0.35	0.04	1039	8.47	<0.01
Positive Other Communications	-0.05	0.03	1039	-1.55	0.12
Negative Other Communications	0.22	0.04	1039	6.18	<0.01
Positive Facebook Communications: Non-romantic	0.01	0.08	1039	0.11	0.91
Negative Facebook Communications: Non-romantic	0.14	0.16	1039	0.86	0.39
Day	-0.10	0.03	1039	-3.26	<0.01
Positive Facebook Communications: Partner	-0.23	0.09	1039	-2.62	0.01
Negative Facebook Communications: Partner	0.41	0.16	1039	2.61	0.01
Agreeableness	-0.01	0.06	83	-0.16	0.87
Negative Communications*Agreeable	-0.01	0.04	1039	-0.36	0.72
Agreeableness*Day	-0.01	0.00	1039	-1.27	0.21
Negative Communications*Agreeable*Day	-0.00	0.01	1039	-0.51	0.61

Note. Hypothesis 5N

Table 13
Interaction: Negative Facebook Communications X Vulnerable Narcissism Predicting Daily Negative Mood

Predictor	*b*	*se*	*df*	*t*	*p*
Sex	-0.17	0.73	83	-0.24	0.81
Age	-0.40	0.27	83	-1.49	0.14
Relationship Status	-0.09	1.35	83	-0.07	0.95
Length of Relationship	-0.02	0.02	83	-1.00	0.32
Positive In-person Communications	-0.11	0.03	1039	-3.85	<0.01
Negative In-person Communications	0.35	0.04	1039	8.52	<0.01
Positive Other Communications	-0.05	0.03	1039	-1.59	0.11
Negative Other Communications	0.21	0.03	1039	6.06	<0.01
Positive Facebook Communications: Non-romantic	0.01	0.08	1039	0.12	0.90
Negative Facebook Communications: Non-romantic	0.13	0.16	1039	0.82	0.41
Day	-0.10	0.03	1039	-3.27	<0.01
Positive Facebook Communications: Partner	-0.23	0.09	1039	-2.56	0.01
Negative Facebook Communications: Partner	0.39	0.15	1039	2.63	0.01
Vulnerable Narcissism	0.11	0.06	83	1.60	0.11
Negative Communications*Vulnerable	0.03	0.05	1039	0.63	0.53
Vulnerable*Day	0.00	0.01	1039	0.10	0.92
Negative Communications*Vulnerable*Day	-0.00	0.00	1039	-0.51	0.61

Note. Hypothesis 6N

Table 14

Interaction: Negative Facebook Communications X Anxious Attachment Predicting Daily Negative Mood

Predictor	*b*	*se*	*df*	*t*	*p*
Sex	0.02	0.73	83	0.02	0.98
Age	-0.33	0.26	83	-1.26	0.21
Relationship Status	-0.38	1.30	83	-0.29	0.77
Length of Relationship	-0.01	0.02	83	-0.59	0.56
Positive In-person Communications	-0.11	0.03	1039	-3.82	<0.01
Negative In-person Communications	0.35	0.04	1039	8.59	<0.01
Positive Other Communications	-0.05	0.03	1039	-1.52	0.13
Negative Other Communications	0.21	0.03	1039	6.06	<0.01
Positive Facebook Communications: Non-romantic	0.01	0.08	1039	0.10	0.92
Negative Facebook Communications: Non-romantic	0.11	0.16	1039	0.68	0.50
Day	-0.10	0.03	1039	-3.34	<0.01
Positive Facebook Communications: Partner	-0.21	0.09	1039	-2.49	0.01
Negative Facebook Communications: Partner	0.62	0.17	1039	3.75	<0.01
Anxious Attachment	0.10	0.06	83	1.82	0.07
Negative Communications*Anxious	-0.04	0.03	1039	-1.56	0.12
Anxious*Day	0.00	0.00	1039	0.75	0.45
Negative Communications*Anxious*Day	-0.00	0.00	1039	-0.13	0.90

Note. Hypothesis 7N

Table 15
Interaction: Negative Facebook Communications X Social Support Predicting Daily Negative Mood

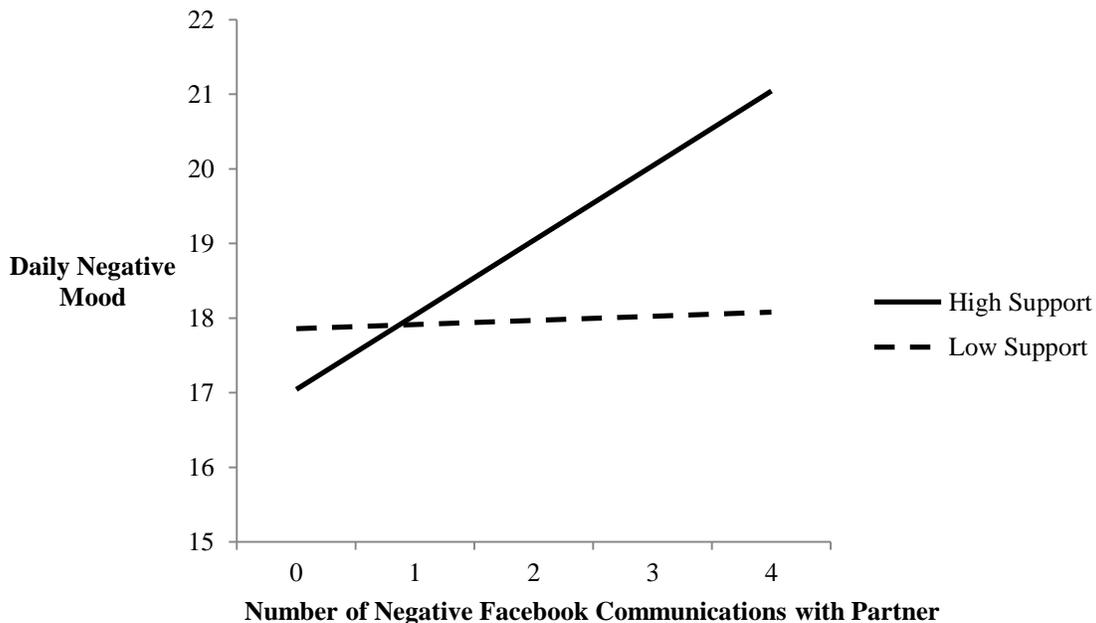| Predictor	*b*	*se*	*df*	*t*	*p*
Sex	-0.17	0.73	83	-0.23	0.82
Age	-0.37	0.27	83	-1.36	0.18
Relationship Status	-0.55	1.32	83	-0.42	0.68
Length of Relationship	-0.01	0.02	83	-0.51	0.61
Positive In-person Communications	-0.11	0.03	1039	-3.79	<0.01
Negative In-person Communications	0.35	0.04	1039	8.46	<0.01
Positive Other Communications	-0.05	0.03	1039	-1.62	0.11
Negative Other Communications	0.21	0.03	1039	5.88	<0.01
Positive Facebook Communications: Non-romantic	0.01	0.08	1039	0.15	0.88
Negative Facebook Communications: Non-romantic	0.11	0.16	1039	0.70	0.49
Day	-0.10	0.03	1039	-3.35	<0.01
Positive Facebook Communications: Partner	-0.24	0.09	1039	-2.77	0.01
Negative Facebook Communications: Partner	0.53	0.15	1039	3.57	<0.01
Social Support	-0.12	0.12	83	-1.14	0.26
Negative Communication*SPS	0.14	0.07	1039	1.89	0.06
Social Support*Day	-0.00	0.01	1039	-0.47	0.64
Negative Communication*SPS*Day	-0.02	0.01	1039	-1.71	0.09

Note. Hypothesis 8N

Figure 1. Interaction: Social Support X Negative Facebook Communications Predicting Negative Mood

Table 16
Romantic Partner Facebook Communications Predicting Daily Relationship Satisfaction

Predictor	b	se	df	t	p
Sex	-0.07	0.17	84	-0.43	0.67
Age	0.06	0.06	84	0.99	0.33
Relationship Status	0.03	0.30	84	0.11	0.91
Length of Relationship	0.00	0.00	84	-0.05	0.96
Positive In-person Communications	0.07	0.01	1037	9.08	<0.01
Negative In-person Communications	-0.08	0.01	1037	-7.65	<0.01
Positive Other Communications	0.05	0.01	1037	5.48	<0.01
Negative Other Communications	-0.07	0.01	1037	-7.56	<0.01
Positive Facebook Communications: Non-romantic	0.00	0.02	1037	-0.13	0.90
Negative Facebook Communications: Non-romantic	0.03	0.04	1037	0.67	0.51
Day	-0.02	0.01	1037	-2.06	0.04
Positive Facebook Communications: Partner	0.07	0.03	1037	1.94	0.05
Negative Facebook Communications: Partner	-0.15	0.06	1037	-2.43	0.02
Day*Positive	0.00	0.00	1037	0.18	0.85
Day*Negative	0.00	0.01	1037	-0.17	0.86

Note. Hypotheses 2R and 3R

Table 17
Interaction: Negative Facebook Communications X Neuroticism Predicting Daily Relationship Satisfaction

Predictor	b	se	df	t	p
Sex	-0.07	0.16	83	-0.45	0.65
Age	0.06	0.06	83	1.04	0.30
Relationship Status	0.01	0.30	83	0.04	0.97
Length of Relationship	0.00	0.00	83	0.04	0.97
Positive In-person Communications	0.07	0.01	1036	9.11	<0.01
Negative In-person Communications	-0.08	0.01	1036	-7.65	<0.01
Positive Other Communications	0.05	0.01	1036	5.49	<0.01
Negative Other Communications	-0.07	0.01	1036	-7.53	<0.01
Positive Facebook Communications: Non-romantic	-0.00	0.02	1036	-0.10	0.92
Negative Facebook Communications: Non-romantic	0.03	0.04	1036	0.71	0.48
Day	-0.02	0.01	1036	-2.13	0.03
Positive Facebook Communications: Partner	0.07	0.02	1036	3.18	<0.01
Negative Facebook Communications: Partner	-0.17	0.04	1036	-4.26	<0.01
Neuroticism	-0.00	0.01	83	-0.31	0.75
Negative Communications*Neuroticism	-0.00	0.01	1036	-0.29	0.77
Neuroticism*Day	-0.00	0.00	1036	-1.92	0.06
Negative Communications*Neuroticism*Day	0.00	0.00	1036	1.00	0.32

Note. Hypothesis 4R
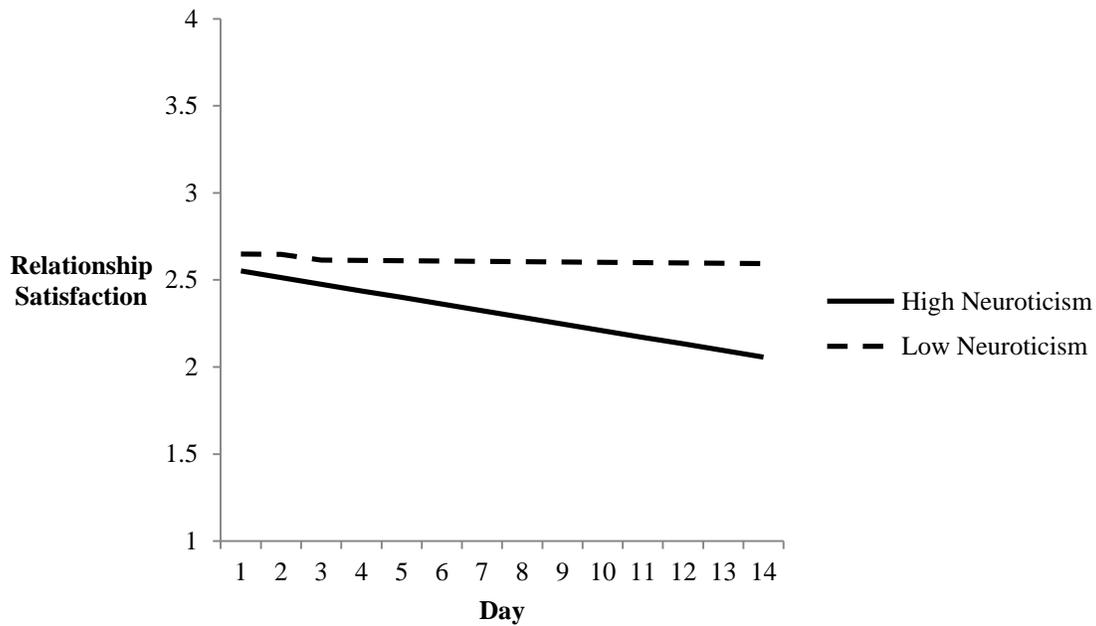
Figure 2. *Trajectory of Relationship Satisfaction over Time by Neuroticism*

Table 18
Interaction: Negative Facebook Communications X Anxious Attachment Predicting Relationship Satisfaction

Predictor	b	se	df	t	p
Sex	-0.13	0.15	83	-0.86	0.39
Age	0.05	0.06	83	0.90	0.37
Relationship Status	-0.06	0.28	83	-0.20	0.84
Length of Relationship	0.00	0.00	83	0.19	0.85
Positive In-person Communications	0.07	0.01	1036	9.03	<0.01
Negative In-person Communications	-0.08	0.01	1036	-7.62	<0.01
Positive Other Communications	0.05	0.01	1036	5.48	<0.01
Negative Other Communications	-0.07	0.01	1036	-7.54	<0.01
Positive Facebook Communications: Non-romantic	-0.00	0.02	1036	-0.05	0.96
Negative Facebook Communications: Non-romantic	0.03	0.04	1036	0.77	0.44
Day	-0.02	0.01	1036	-2.23	0.03
Positive Facebook Communications: Partner	0.07	0.02	1036	3.10	<0.01
Negative Facebook Communications: Partner	-0.19	0.04	1036	-4.35	<0.01
Anxious Attachment	-0.03	0.01	83	-2.49	0.01
Negative Communications*Anxious	0.01	0.01	1036	0.80	0.42
Anxious*Day	-0.00	0.00	1036	-2.33	0.02
Negative Communications*Anxious*Day	0.00	0.00	1036	0.01	0.99

Note. Hypothesis 7R
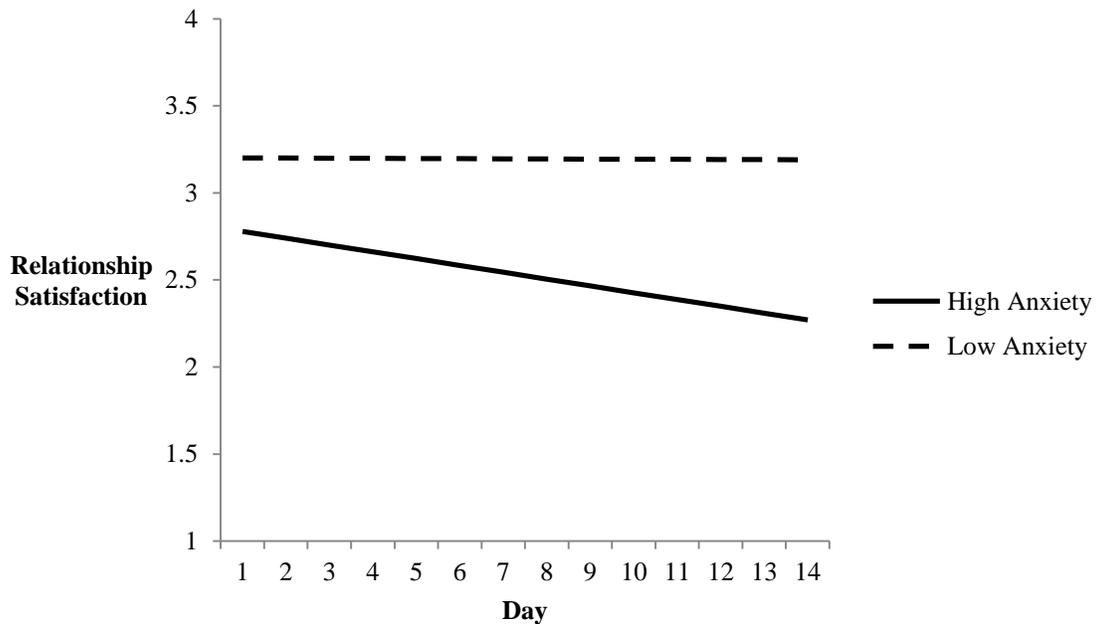
Figure 3. *Trajectory of Relationship Satisfaction over Time by Attachment Style*

Table 19
Interaction: Negative Facebook Communications X Social Support Predicting Relationship Satisfaction

Predictor	b	se	df	t	p
Sex	-0.06	0.16	83	-0.39	0.70
Age	0.07	0.06	83	1.10	0.27
Relationship Status	0.01	0.30	83	0.02	0.99
Length of Relationship	-0.00	0.00	83	-0.04	0.97
Positive In-person Communications	0.07	0.01	1036	9.06	<0.01
Negative In-person Communications	-0.08	0.01	1036	-7.51	<0.01
Positive Other Communications	0.05	0.01	1036	5.49	<0.01
Negative Other Communications	-0.07	0.01	1036	-7.32	<0.01
Positive Facebook Communications: Non-romantic	-0.00	0.02	1036	-0.14	0.89
Negative Facebook Communications: Non-romantic	0.03	0.04	1036	0.67	0.51
Day	-0.02	0.01	1036	-2.05	0.04
Positive Facebook Communications: Partner	0.07	0.02	1036	3.22	<0.01
Negative Facebook Communications: Partner	-0.17	0.04	1036	-4.50	<0.01
Social Support	0.02	0.02	83	1.03	0.31
Negative Communication*SPS	-0.02	0.01	1036	-1.18	0.24
Social Support*Day	0.00	0.00	1036	0.82	0.41
Negative Communication*SPS*Day	0.00	0.00	1036	0.30	0.76

Note. Hypothesis 8R

Table 20
Romantic Partner Communications Predicting Daily Emotional Closeness

Predictor	b	se	df	t	p
Sex	-0.02	0.16	84	-0.15	0.88
Age	0.02	0.06	84	0.33	0.74
Relationship Status	0.06	0.30	84	0.21	0.84
Length of Relationship	0.00	0.00	84	-0.37	0.71
Positive In-person Communications	0.09	0.01	1034	11.84	<0.01
Negative In-person Communications	-0.06	0.01	1034	-5.32	<0.01
Positive Other Communications	0.05	0.01	1034	5.58	<0.01
Negative Other Communications	-0.06	0.01	1034	-6.36	<0.01
Positive Facebook Communications: Non-romantic	-0.02	0.02	1034	-0.91	0.37
Negative Facebook Communications: Non-romantic	0.06	0.04	1034	1.30	0.19
Day	-0.02	0.01	1034	-2.04	0.04
Positive Facebook Communications: Partner	0.08	0.03	1034	2.28	0.02
Negative Facebook Communications: Partner	-0.12	0.06	1034	-1.94	0.05
Day*Positive	0.00	0.00	1034	-0.74	0.48
Day*Negative	-0.01	0.01	1034	-1.00	0.32

Note. Hypotheses 2C and 3C

Table 21
Interaction: Negative Facebook Communications X Neuroticism Predicting Daily Emotional Closeness

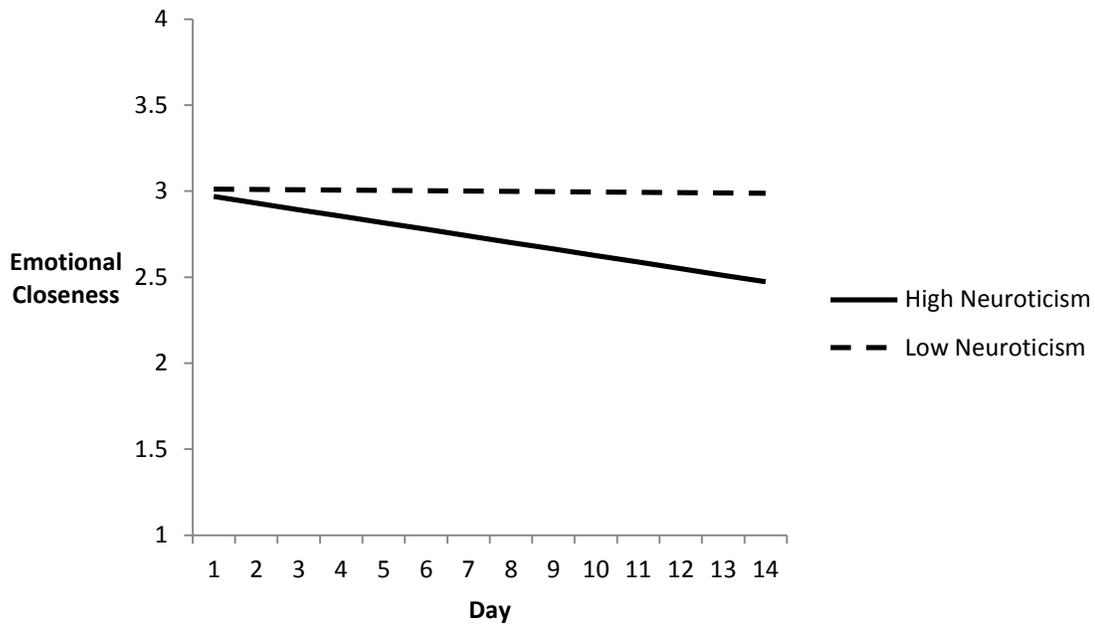| Predictor	b	se	df	t	p
Sex	-0.03	0.16	83	-0.18	0.86
Age	0.02	0.06	83	0.37	0.71
Relationship Status	0.05	0.30	83	0.17	0.86
Length of Relationship	-0.00	0.00	83	-0.33	0.74
Positive In-person Communications	0.09	0.01	1033	12.03	<0.01
Negative In-person Communications	-0.06	0.01	1033	-5.32	<0.01
Positive Other Communications	0.05	0.01	1033	5.69	<0.01
Negative Other Communications	-0.06	0.01	1033	-6.37	<0.01
Positive Facebook Communications: Non-romantic	-0.02	0.02	1033	-0.88	0.38
Negative Facebook Communications: Non-romantic	0.07	0.04	1033	1.57	0.12
Day	-0.02	0.01	1033	-2.33	0.02
Positive Facebook Communications: Partner	0.07	0.02	1033	3.03	<0.01
Negative Facebook Communications: Partner	-0.19	0.04	1033	-4.85	<0.01
Neuroticism	-0.00	0.01	83	-0.05	0.96
Negative Communications*Neuroticism	0.01	0.01	1033	1.73	0.08
Neuroticism*Day	-0.00	0.00	1033	-2.02	0.04
Negative Communications*Neuroticism*Day	-0.00	0.00	1033	-1.34	0.18

Note. Hypothesis 4C

Figure 4. *Trajectory of Closeness over Time by Neuroticism*

Table 22
Interaction: Negative Facebook Communications X Anxious Attachment Predicting Daily Emotional Closeness

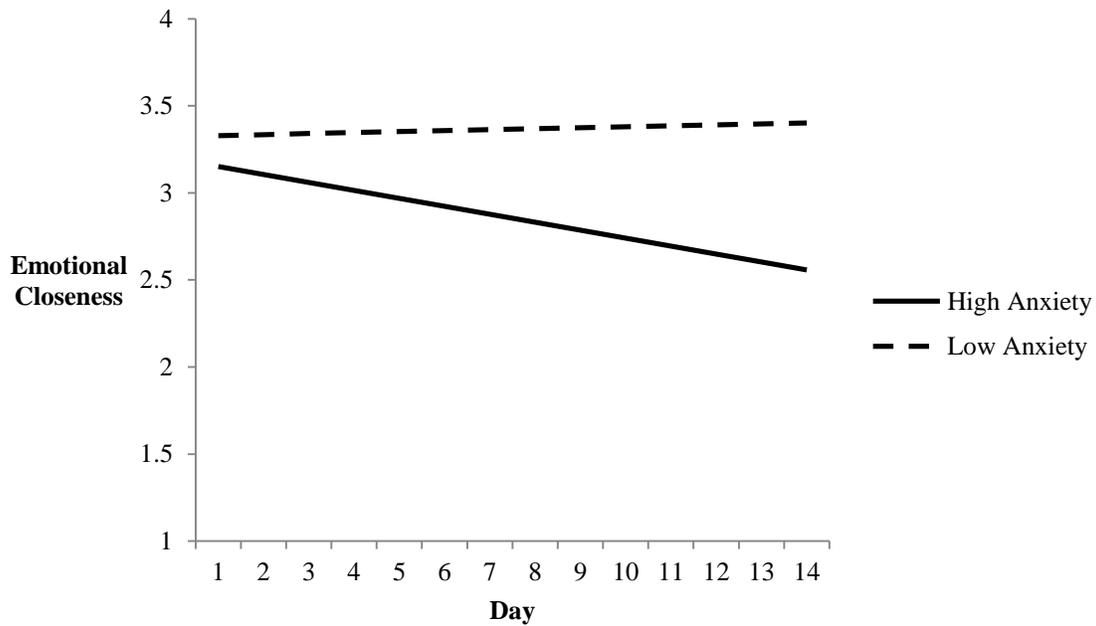| Predictor	b	se	df	t	p
Sex	-0.09	0.16	83	-0.56	0.58
Age	0.02	0.06	83	0.28	0.78
Relationship Status	0.01	0.28	83	0.02	0.98
Length of Relationship	-0.00	0.00	83	-0.24	0.81
Positive In-person Communications	0.09	0.01	1033	11.77	<0.01
Negative In-person Communications	-0.06	0.01	1033	-5.24	<0.01
Positive Other Communications	0.05	0.01	1033	5.64	<0.01
Negative Other Communications	-0.06	0.01	1033	-6.45	<0.01
Positive Facebook Communications: Non-romantic	-0.02	0.02	1033	-1.07	0.29
Negative Facebook Communications: Non-romantic	0.07	0.04	1033	1.58	0.11
Day	0.02	0.01	1033	-2.73	0.01
Positive Facebook Communications: Partner	0.06	0.02	1033	3.03	<0.01
Negative Facebook Communications: Partner	-0.20	0.04	1033	-4.43	<0.01
Anxious Attachment	-0.01	0.01	83	-1.13	0.26
Negative Communications*Anxious	0.01	0.01	1033	1.09	0.28
Anxious*Day	-0.00	0.00	1033	-3.60	<0.01
Negative Communications*Anxious*Day	-0.00	0.00	1033	-1.19	0.23

Note. Hypothesis 7C

Figure 5. *Trajectory of Closeness over Time by Attachment Style*

Table 23
Interaction: Negative Facebook Communications X Social Support Predicting Daily Emotional Closeness

Predictor	*b*	*se*	*df*	*t*	*p*
Sex	-0.02	0.01	83	-0.07	0.94
Age	0.03	0.06	83	0.46	0.65
Relationship Status	0.03	0.30	83	0.10	0.92
Length of Relationship	-0.00	0.00	83	-0.32	0.75
Positive In-person Communications	0.09	0.01	1033	11.84	<0.01
Negative In-person Communications	-0.05	0.01	1033	-5.06	<0.01
Positive Other Communications	0.05	0.01	1033	5.58	<0.01
Negative Other Communications	-0.06	0.01	1033	-6.09	<0.01
Positive Facebook Communications: Non-romantic	-0.02	0.02	1033	-0.88	0.38
Negative Facebook Communications: Non-romantic	0.06	0.04	1033	1.52	0.13
Day	-0.02	0.01	1033	-2.38	0.02
Positive Facebook Communications: Partner	0.07	0.02	1033	3.03	<0.01
Negative Facebook Communications: Partner	-0.19	0.04	1033	-4.81	<0.01
Social Support	0.03	0.02	83	1.30	0.20
Negative Communication*SPS	-0.03	0.02	1033	-1.52	0.13
Social Support*Day	0.00	0.00	1033	0.86	0.39
Negative Communication*SPS*Day	0.00	0.00	1033	0.83	0.41

Note. Hypothesis 8C

DISCUSSION

The primary focus of this study was the effect of Facebook communications between romantic partners on loneliness, positive and negative mood, relationship satisfaction, and emotional closeness. Positive and negative communications with one's romantic partner, as well as a series of individual difference moderators were used to predict each participant's daily level of all outcome variables and changes in those values over time. To ensure that any effects were attributable to Facebook communications with one's romantic partner, each set of analyses controlled for Facebook communications with individuals other than the participant's romantic partner, in-person communications with the partner and others, as well as communications using other platforms, such as texting and Skype.

After controlling for all other communications listed by the participant, a larger number of negative Facebook communications with the romantic partner predicted higher daily loneliness. Positive Facebook communications with the partner had no significant effect on daily loneliness. There was also no effect of communications on change in loneliness over time. It was hypothesized that positive communications would have a stronger effect on daily loneliness than negative communications, but that was not the case. Based on these data, negative communications are more strongly weighted than positive communications in social exchanges between romantic partners.

The analyses for positive mood mirrored those of loneliness. After controlling for positive and negative communications on Facebook with people other than the participant's romantic partner, positive and negative in-person and other communications, a larger number of negative Facebook communications with one's partner predicted lower daily positive mood. Once again, there was no significant effect of positive Facebook communications

with one's partner. Facebook communications with one's partner also had no effect on change in positive mood over time. Neuroticism, agreeableness, vulnerable narcissism, and anxious attachment were all tested as possible moderators for the relationship between negative Facebook communications with one's romantic partner and positive mood, but there were no significant moderation effects.

The results for negative mood closely resembled those for positive mood. After controlling for all other reported communications, a higher number of negative Facebook communications with one's partner significantly predicted higher daily negative mood. A higher number of positive Facebook communications with one's partner predicted only marginally lower daily negative mood. It was hypothesized that negative mood would only be affected by positive events, but that was not the case, as negative events had a stronger effect upon negative mood. There were also no significant effects of daily Facebook communications with the partner on change in negative mood over time.

Neuroticism, agreeableness, vulnerable narcissism, anxious attachment, and social support were tested as individual moderators on the relationship between negative Facebook communications and negative mood. The interaction between social support and negative communications approached significance, but it was not in the predicted direction. Individuals with higher perceived support experienced larger increases in negative mood as a result of negative Facebook communications with their romantic partner. A possible explanation for this unexpected result is that these individuals received a bulk of their social support from their romantic partner and negative Facebook communications removed the partner as a source of support, which resulted in an increase in negative mood.

The relationship quality variables are where the pattern of results begins to change from those previously described. After including all previously mentioned control variables, both positive and negative Facebook communications with one's partner significantly predicted daily relationship satisfaction. A higher number of positive communications predicted higher daily relationship satisfaction, and a higher number of negative communications predicted lower daily relationship satisfaction. There were no effects on change in relationship satisfaction over time. Neuroticism, anxious attachment, and social support were all tested for moderation effects on the relationship between negative Facebook communications and relationship satisfaction, but there were no significant effects. However, individuals high in neuroticism and anxious attachment experience a noted decline in relationship satisfaction over the course of the study.

Emotional closeness demonstrated a similar pattern to relationship satisfaction. After including all control variables, both positive and negative Facebook communications with one's partner significantly predicted daily emotional closeness. A higher number of positive Facebook communications predicted greater daily emotional closeness, while more negative Facebook communications predicted less daily closeness. There were no effects of Facebook communications on change in emotional closeness over time. Neuroticism, anxious attachment, and social support were hypothesized to be moderators of the relationship between negative communications and emotional closeness, but there were no significant moderation effects. However, high levels of neuroticism and anxious attachment predicted a slightly faster decline in emotional closeness over the course of the study.

Within these results there appear to be different patterns for individual and relationship outcomes. For the individual outcomes, loneliness and positive and negative

mood, negative Facebook communications were a stronger predictor than positive ones. When predicting the relationship outcomes, both positive and negative communications were significant. When it comes to how an individual's daily interactions affect how they feel, it is the negative communications that are the most important. However, when it comes to the health of one's relationship both the positive and negative events have a role to play.

This study has given us a first look into the effects of social media communications on loneliness, mood, and relationship quality, but there are limitations to the study. This study only inquired about interactions from one partner. A more comprehensive model could be developed if both partners were asked to provide daily reports of interactions. It would be useful to collect data from male partners because the current study included primarily female participants.

A dataset as complex and multifaceted as this one has endless possibilities for testable hypotheses that are only constrained by time and effort. There are many more potential findings within this dataset, including an analysis of the additive effects of types of communication on relationship quality. In essence, are individuals who only communicate with their partner via Facebook less satisfied with their relationship than those who communicate regularly in-person, on Facebook, and using other methods of communication?

There is a great deal of untapped potential in the area of couple communications on Facebook predicting relationship and individual outcomes. Future studies could take into account reports from both partners to develop a more accurate picture of how these communications play out and the effect they have on relationship satisfaction and emotional closeness. This would also have the added benefit of balancing the male to female ratio, which was a limitation of this study.

It is important to keep in mind that Facebook is not the only method of communication utilized by the individuals in this study. In fact, it does not even have the strongest effect upon the individual and relationship outcomes measured here. In-person communications and other forms of communication are still much more powerful in predicting both mood and relationship outcomes. However, it is important to examine the unique effect of Facebook communications between young couples, as the majority of previous studies have utilized Facebook as an outcome variable instead of a predictor. As previously stated, young adults spend a great deal of time interacting with one another using media devices and social networking sites. There is still much to be learned about the effect of technological communication with others on relationship outcomes.

One major focus of this study was to determine whether Facebook plays a sufficiently large role in the lives of young adults that it has an effect on the functioning of their relationships above and beyond other forms of communication, and this study has taken a first step in that direction. As time passes, Facebook may fade from popularity or use, but the field must remember not to discount the role of emerging social media within the relationships of young and emerging adults. Popular media attempts to paint a picture of young adults as narcissistic individuals who would rather stare at a computer screen than talk to one another, but this is a misrepresentation. Society is now faced with a generation who was presented with the unlimited technological capability of the internet and they use it to communicate with one another. Future research on romantic relationships should include technological communication as part of relationship models, or important components of relationships will be overlooked.

APPENDIX A.

INITIAL SURVEY

What is your gender?
- Female
- Male

Age_____

Relationship status
- Dating
- Cohabitating
- Married

Length of romantic relationship____

How close does your romantic partner live to you?
- Same house/apartment/building
- Same town
- Within 1 hour drive
- 1-2 hour drive
- More than 2 hours

How often do you see your romantic partner in person?
- Multiple times per day
- Daily
- Multiple times per week
- At least once a week
- More than once per month
- At least once per month
- Less than once per month

Ethnicity
- American Indian/Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White
- Hispanic
- Other

Year in School
- Freshman
- Sophomore
- Junior
- Senior
- Senior +
- Graduate Student

Do you report your relationship status on Facebook?
- Yes
- No

When you visit Facebook, which features of the site do you use?
- Chatting with friends

    Never   Frequently

    1   2   3   4   5   6   7

- Posting notes

    Never   Frequently

    1   2   3   4   5   6   7

- Sharing links

    Never   Frequently

    1   2   3   4   5   6   7

- Commenting on links posted by others

    Never   Frequently

    1   2   3   4   5   6   7

- Playing games

    Never   Frequently

    1   2   3   4   5   6   7

- Discussion boards

    Never   Frequently

    1   2   3   4   5   6   7

- Group membership

    Never   Frequently

    1   2   3   4   5   6   7

- Following the activity of friends

    Never   Frequently

    1   2   3   4   5   6   7

- Event planning

    Never   Frequently

    1   2   3   4   5   6   7

- Picture sharing

    Never   Frequently

    1   2   3   4   5   6   7

- Commenting on the pictures of others

    Never   Frequently

    1   2   3   4   5   6   7

- Other _____

    Never   Frequently

    1   2   3   4   5   6   7

Have you ever experienced relationship (personal or professional) difficulties with any of the following parties because of your Facebook use? Please rate the frequency of difficulties with each of the listed parties.

1. Parents

Never   Frequently

    1   2   3   4   5   6   7

2. Siblings

Never   Frequently

    1   2   3   4   5   6   7

3. Grandparents

Never   Frequently

    1   2   3   4   5   6   7

4. Extended family

Never   Frequently

    1   2   3   4   5   6   7

5. Friends

Never   Frequently

    1   2   3   4   5   6   7

6. Romantic partners

Never   Frequently

    1   2   3   4   5   6   7

7. Acquaintances

Never   Frequently

    1   2   3   4   5   6   7

8. Strangers

Never   Frequently

    1   2   3   4   5   6   7

9. Superiors—professor/boss

Never   Frequently

    1   2   3   4   5   6   7

The following is a list of potential relationship difficulties that you may have experience because of your Facebook use. Please rate the frequency that you have experience each problem

10. Romantic jealousy

Never   Frequently
     1   2   3   4   5   6   7

11. Non-romantic jealousy

Never   Frequently
     1   2   3   4   5   6   7

12. Accidental public insult by you

Never   Frequently
     1   2   3   4   5   6   7

13. Intentional public insult by you

Never   Frequently
     1   2   3   4   5   6   7

14. Accidental public insult of you or another by another party

Never   Frequently
     1   2   3   4   5   6   7

15. Intentional public insult of you or another by another party

Never   Frequently
     1   2   3   4   5   6   7

16. Status feuds (argument between 2 or more people because of a status/comment)

Never   Frequently
     1   2   3   4   5   6   7

17. Cyberbullying

Never   Frequently
     1   2   3   4   5   6   7

18. Breaking up because of something that happened on Facebook

Never   Frequently
     1   2   3   4   5   6   7

19. Trouble at work because of something someone saw on your Facebook page

Never   Frequently
     1   2   3   4   5   6   7

20. Trouble with parents because of something someone saw on your Facebook page

Never   Frequently
     1   2   3   4   5   6   7

21. Trouble with friends because of something someone saw on your Facebook page

Never   Frequently
     1   2   3   4   5   6   7

22. Trouble with romantic partner because of something someone saw on your Facebook page

Never   Frequently
     1   2   3   4   5   6   7

23. Trouble at school because of something someone saw on your Facebook page
    Never   Frequently
              1   2   3   4   5   6   7
24. Conflict among friends
    Never   Frequently
              1   2   3   4   5   6   7
25. Hurt feelings
    Never   Frequently
              1   2   3   4   5   6   7
26. Other
    Never   Frequently
              1   2   3   4   5   6   7
    Please explain:

Please use this list of common human traits to describe yourself as accurately as possible.
Describe yourself as you see yourself at the present time, not as you wish to be in the future.
Describe yourself as you are generally or typically, as compared with other persons you
know of the same sex and of roughly your same age.
For each trait, please choose the number indicating how accurately that trait describes you,
using the following rating scale.

1	2	3	4	5	6	7	8	9
Extremely inaccurate	Very inaccurate	Moderately inaccurate	Slightly inaccurate		Slightly accurate	Moderately accurate	Very accurate	Extremely accurate

____ Bashful	____ Energetic	____ Moody	____ Systematic
____ Bold	____ Envious	____ Organized	____ Talkative
____ Careless	____ Extraverted	____ Philosophical	____ Temperamental
____ Cold	____ Fretful	____ Practical	____ Touchy
____ Complex	____ Harsh	____ Quiet	____ Uncreative
____ Cooperative	____ Imaginative	____ Relaxed	____ Unenvious
____ Creative	____ Inefficient	____ Rude	____ Unintellectual
____ Deep	____ Intellectual	____ Shy	____ Unsympathetic
____ Disorganized	____ Jealous	____ Sloppy	____ Warm
____ Efficient	____ Kind	____ Sympathetic	____ Withdrawn

Read each pair of statements and then choose the one that is closer to your own feelings and beliefs.
Please do not skip any items
1. Please choose the one that is closer to your own feelings and beliefs.
    __When people compliment me I sometimes get embarrassed.
    __I know that I am good because everybody keeps telling me so.
2. Please choose the one that is closer to your own feelings and beliefs.
    __I prefer to blend in with the crowd.
    __I like to be the center of attention.
3. Please choose the one that is closer to your own feelings and beliefs.
    __I am no better or no worse than most people
    __I think I am a special person.
4. Please choose the one that is closer to your own feelings and beliefs.
    __I like having authority over people
    __I don't mind following orders
5. Please choose the one that is closer to your own feelings and beliefs.
    __I find it easy to manipulate people.
    __I don't like it when I find myself manipulating people.
6. Please choose the one that is closer to your own feelings and beliefs.
    __I insist upon getting the respect that is due me.
    __I usually get the respect that I deserve.
7. Please choose the one that is closer to your own feelings and beliefs.
    __I try not to be a show off.
    __I am apt to show off if I get the chance.
8. Please choose the one that is closer to your own feelings and beliefs.
    __I always know what I am doing
    __Sometimes I am not sure of what I am doing.
9. Please choose the one that is closer to your own feelings and beliefs.
    __Sometimes I tell good stories.
    __Everybody likes to hear my stories.
10. Please choose the one that is closer to your own feelings and beliefs.
    __I expect a great deal from other people.
    __I like to do things for other people.
11. Please choose the one that is closer to your own feelings and beliefs.
    __I really like to be the center of attention.
    __It makes me uncomfortable to be the center of attention.
12. Please choose the one that is closer to your own feelings and beliefs.
    __Being an authority doesn't mean that much to me.
    __People always seem to recognize my authority.
13. Please choose the one that is closer to your own feelings and beliefs.
    __I am going to be a great person.
    __I hope I am going to be successful.
14. Please choose the one that is closer to your own feelings and beliefs.
    __People sometimes believe what I tell them
    __I can make anybody believe anything I want them to

15. Please choose the one that is closer to your own feelings and beliefs.
    __I am more capable than other people
    __There is a lot that I can learn from other people.

16. Please choose the one that is closer to your own feelings and beliefs.
    __I am much like everybody else.
    __I am an extraordinary person.

Instructions: The following statements describe personal feelings or behavior. For each statement, please indicate how characteristic the statement is of you on a scale of 1 to 5.

1 "very uncharacteristic or untrue; strongly disagree

5 "very characteristic or true; strongly agree

1. I can become entirely absorbed in thinking about my personal affairs, my health, my cares or my relations to others
Strongly Disagree   Strongly Agree
       1   2   3   4   5

2. My feelings are easily hurt by ridicule or by the slighting remarks of others
Strongly Disagree   Strongly Agree
       1   2   3   4   5

3. When I enter a room I often become self-conscious and feel that the eyes of others are upon me.
Strongly Disagree   Strongly Agree
       1   2   3   4   5

4. I dislike sharing the credit of an achievement with others
Strongly Disagree   Strongly Agree
       1   2   3   4   5

5. I dislike being with a group unless I know that I am appreciated by at least one of those present.
Strongly Disagree   Strongly Agree
       1   2   3   4   5

6. I feel that I am temperamentally different from most people
Strongly Disagree   Strongly Agree
       1   2   3   4   5

7. I often interpret the remarks of others in a personal way.
Strongly Disagree   Strongly Agree
       1   2   3   4   5

8. I easily become wrapped up in my own interests and forget the existence of others.
Strongly Disagree   Strongly Agree
       1   2   3   4   5

9. I feel that I have enough on my hands without worrying about other people's troubles.
Strongly Disagree   Strongly Agree
       1   2   3   4   5

10. I am secretly "put out" when other people come to me with their troubles, asking me for my time and sympathy
Strongly Disagree   Strongly Agree
       1   2   3   4   5

Instruction: The following statements concern how you feel in romantic relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by indicating how much you agree or disagree with it. Mark your answer using the following rating scale:

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree

1. It helps to turn to my romantic partner in times of need.
2. I need a lot of reassurance that I am loved by my partner.
3. I want to get close to my partner, but I keep pulling back.
4. I find that my partner(s) don't want to get as close as I would like.
5. I turn to my partner for many things, including comfort and reassurance.
6. My desire to be very close sometimes scares people away.
7. I try to avoid getting too close to my partner.
8. I do not often worry about being abandoned.
9. I usually discuss my problems and concerns with my partner.
10. I get frustrated if romantic partners are not available when I need them.
11. I am nervous when partners get too close to me.
12. I worry that romantic partners won't care about me as much as I care about them.

<u>STRONGLY DISAGREE</u>	<u>DISAGREE</u>	<u>AGREE</u>	<u>STRONGLY</u>
1	2	3	4

1. There are people I can depend on to help me if I really need it.
2. I feel that I do not have close personal relationships with other people.
3. There is no one I can turn to for guidance in times of stress.
4. There are people who enjoy the same social activities that I do.
5. I do not think other people respect my skills and abilities.
6. If something went wrong, no one would come to my assistance.
7. I have close relationships that provide me with a sense of emotional security and well-being.
8. I have relationships where my competence and skills are recognized.
9. There is no one who shares my interests and concerns.
10. There is a trustworthy person I could turn to for advice if I were having problems.

Please input your email address. This information will be used to send you reminder emails to fill out the short survey about your daily activities. You will only receive 1 email per day and the link in each email will expire after 24 hours. The reminder emails will cease after the 14 days of the study have passed. In addition, we may use the email address provided to send you a short survey about your relationship in a few months.
If you complete all 14 surveys you will be eligible to win a $50 Target gift card.

_____

82

APPENDIX B

DAILY DIARY SURVEY

1. How many minutes did you spend on Facebook today? ___
2. How many times did you check Facebook today? ___
3. Which of the following interactions did you have on Facebook, in person, or using any other method (i.e., texting, Skype, etc.) within the last 24 hours, **NOT INCLUDING THOSE WITH YOU ROMANTIC PARTNER**? Check all that apply

Planned activities/get togethers		Gave criticism		Received criticism
On Facebook		On Facebook		On Facebook
In Person		In Person		In Person
Other		Other		Other
Conflict or argument		**Positive conversation**		**Negative conversation**
On Facebook		On Facebook		On Facebook
In Person		In Person		In Person
Other		Other		Other
Intentionally ignored someone		**Was ignored by someone**		**Joked**
On Facebook		On Facebook		On Facebook
In Person		In Person		In Person
Other		Other		Other

Provided emotional support (i.e., encouragement, talking through a problem, etc.)		*Facebook specific*
On Facebook		**Viewed a Facebook friend's profile/timeline**
In Person		**Looked a Facebook friend's Facebook activity**
Other		**Positive post to someone's profile/timeline**
Received emotional support (i.e., encouragement, talking through a problem, etc.)		**Negative post to someone's profile/timeline**
On Facebook		**Received positive profile/timeline post from someone**
In Person		**Received negative profile/timeline post from someone**
Other		

4. Which of the following interactions on Facebook, in person, or using any other means of communication (i.e., texting, Skype, etc.) did you have **WITH YOUR ROMANTIC PARTNER** within the last 24 hours? Check all that apply.

Planned activities/get togethers			Conflict and/or argument with partner		
	On Facebook		In Person		On Facebook		In Person
	Other				Other		
Criticized partner			**Received criticism from partner**		
	On Facebook		In Person		On Facebook		In Person
	Other				Other		
Positive conversation with partner			**Negative conversation with partner**		
	On Facebook		In Person		On Facebook		In Person
	Other				Other		
Intentionally ignored partner			**Ignored by partner**		
	On Facebook		In Person		On Facebook		In Person
	Other				Other		
Joked with partner			**Flirting with partner**		
	On Facebook		In Person		On Facebook		In Person
	Other				Other		
Provided emotional support to partner (i.e., encouragement, talking through a problem, etc.)			**Talked about your positive feelings with partner**		
	On Facebook		In Person		On Facebook		In Person
	Other				Other		
Received emotional support from partner (i.e., encouragement, talking through a problem, etc.)			**Talked about your negative feelings with partner**		
	On Facebook		In Person		On Facebook		In Person
	Other				Other		
Talked about partner's negative feelings			**Talked about partner's positive feelings**		
	On Facebook		In Person		On Facebook		In Person
	Other				Other		
Learned something positive about my partner			**Learned something negative about my partner**		
	On Facebook		In Person		On Facebook		In Person
	Other				Other		

Facebook specific		
	Viewed partner's profile/timeline	
	Looked through partner's Facebook activity	
	Positive post to partner's profile/timeline	
	Negative post to partner's profile/timeline	
	Received positive profile/timeline post from partner	
	Received negative profile/timeline post from partner	

In Person only	
	Saw partner
	Physical contact with partner (held hands, hugging, etc.)

5. In general, how lonely have you felt in the last 24 hours?

1	2	3	4	5
Not at all lonely				Extremely lonely

6. In general, how satisfied were you with your relationship with your partner in the last 24 hours?

1	2	3	4	5
Low satisfaction		Moderate satisfaction		High satisfaction

7. How emotionally close to your partner did you feel in the last 24 hours?

1	2	3	4	5
Not at all close		Moderately close		Very close

8. This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you felt this way in the last 24 hours. Use the following scale to record your answers.

1	2	3	4	5
Very slightly or not at all	A little	Moderately	Quite a bit	Extremely

__interested   __scared
__distressed   __inspired
__excited   __jittery
__upset   __determined
__enthusiastic   __afraid

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