4-5-2019

Type of Facebook user and correlational relationship with social comparison and self-esteem along with the moderating variable of the Big Five model

Amanda Lilly
amandaelilly@hotmail.com

Type of Facebook user and correlational relationship with social comparison and self-esteem along with the moderating variable of the Big Five model

Amanda Lilly

M.A. Communication and Media, University of Missouri–St. Louis

A Thesis Submitted to The Graduate School at the University of Missouri-St. Louis
in partial fulfillment of the requirements for the degree
Master of Arts in Communication

May 2019

Advisory Committee

Yan Tian, Ph.D.
Chairperson

Amber Reinhart, Ph.D.

Suahn Cho, Ph.D.

Abstract

This thesis examines different types of Facebook users and how different types of

participation on Facebook are associated with social comparison orientation scale and

self-esteem level of the users, and how personality variables moderate the relationship

between social comparison scale and types of Facebook use. Previous research has

investigated the relationship between Facebook use, self-esteem, and social comparison;

however, the results have been mixed, and research on how personality traits are related

to different types of active use of Facebook is needed. Study 1 of this thesis examines

how social comparison orientation and self-esteem relate to how individuals actively use

Facebook, including proactive use and reactive use. Analysis of survey data from a

convenient student sample suggests that while self-esteem is not related to proactive or

reactive use of Facebook, comparison orientation is significantly associated with reactive

use of Facebook. Number of friends is also found to be correlated with proactive and

reactive use of Facebook. Study 2 tests personality variables from the Big Five model as

moderators to better understand the relationship of social comparison orientation and

Facebook user type along with the relationship between number of Facebook friends and

Facebook user type. Analysis of survey data from a convenient student sample suggests

that there is an interaction effect between social comparison orientation and neuroticism

on reactive Facebook use. An interaction effect between number of Facebook friends and

extraversion on reactive Facebook use was also found.

Dedication

I could not have done this thesis without my Dad, Edwin A. Moore. I'm so thankful for all the years of unconditional love and all the lessons you taught me. You taught me how to be tough, brave, and loving. I wish you were still here to see all that I accomplish, but I know you are watching, and I hope I am making you proud. I would not be who I am today without you as my amazing dad. I miss you and I love you.

Acknowledgments

The correlational relationship with self-esteem and Social Comparison Orientation with

type of Facebook user along with the moderating variable of the Big Five model

Introduction

Facebook has become a widely used social media site with around 1.47 billion

daily active users and 2.23 billon monthly active users that allows users to craft profiles

that include photographs and status updates while also interacting with their Facebook

friends' similar profiles through behaviors such as using "react" buttons or commenting

(Facebook Newsroom, 2018). People are spending a significant amount of time on this

social media site, which incidentally exposes them to a large number of social

comparison targets that are carefully cultivated representations of the users posting them.

Johnson and Knobloch-Westerwich (2017) stated that "each month, a typical user of the

most popular SNS, Facebook, spends 6.5 hours accessing the service via computer and

7.75 hours via smartphone app" (p. 54). While research into Facebook is becoming more

prevalent to try and understand how this new type of communication is affecting users

the results are often inconclusive with different studies finding varied effects.

Research has demonstrated positive effects of Facebook use through things like

enhancing social capital, allowing users who struggle to engage in face to face

interpersonal interactions to have a social outlet, and to receive social support from online

friends among others (Liu & Yu, 2013; Steinfield, Ellison, & Lampe, 2008; Tazghini &

Siedlecki, 2013). However, there are also many studies that have found negative effects

from participating on this social networking site. Some of these studies cite the excess of

comparison targets available on Facebook, along with the fact that most of the personae presented on these types of sites are carefully crafted to best present the person who is posting them, to be what is detrimental to the user's well-being (Johnson & Knobloch-Westerwick, 2017; Steers, Wickham, & Acitelli, 2014; Vogel, Rose, Roberts, & Eckles, 2014; Vries & Kühne, 2015). Along with these studies there have also been a few studies that explore different types of Facebook use and how these different types of use interact with affective well-being. Most have found that what they define as passive Facebook use to be the most harmful to user's well-being (Shaw, Timpano, Tran, & Joormann, 2015; Verduyn et. al, 2015; Verduyn, Ybarra, Résibois, Jonides, & Kross, 2017).

These studies suggest that there have been various results on how Facebook is interacting with users' psychological well-being, but can a user's established psychological well-being affect how that user interacts with Facebook? This thesis seeks to address the lack of emphasis on the individual user's Facebook habits and how these relate to their individual psychological characteristics. The missing aspects and presented evidence of the previous research studies lead to the questions of how the type of participation that users engage in on social media sites are related to psychological characteristics such as self-esteem and social comparison orientation and also users' individual personality traits.

Specifically, the first study of this thesis examines how Facebook users' social comparison and self-esteem are related to different types of Facebook use. Verduyn et al. (2015), for example, defined active Facebook usages "as activities that facilitate direct exchanges with others (e.g., posting status updates, commenting on posts)," and passive usage as "consuming information without direct exchanges (e.g., scrolling through news

feeds, viewing posts)" (p. 480). The current study, however, focuses on proactive and reactive Facebook use. These different types of Facebook users will expand on Verduyn et al. s' work by further breaking down the term active user. Proactive users are Facebook users who exhibit high levels of posting, i.e. frequently adding photos, and status updates, to their own profiles. In contrast, reactive users are Facebook users who exhibit high levels of responding to other users' content, i.e. frequently commenting on or, "reacting" to other users' Facebook postings. Both proactive use and reactive use of Facebook are a part of the active use that has been used in previous research, as they both involve direct engagement or communication with others (Verduyn et. al., 2017). However, they are conceptually different, since proactive users initiate the communication process through frequent posting, whereas reactive users participate in the communication process by responding to other's posts. While passive use can be summed up as the habit of "lurking" on Facebook without engaging in any of the dynamic behaviors that are available on Facebook, active is a very broad term that encompasses a long list of possible behaviors as mentioned above. When using the terms proactive and reactive, it is easier to see how social comparison orientation and self-esteem can correspond to the user's natural way of engaging with Facebook, because these definitions breakdown active Facebook usage into how users respond to others while also managing their own profiles.

The second study of this thesis examines how the different components of the Big Five could moderate the relationship between Facebook user type (proactive/reactive), social comparison orientation, and number of Facebook friends. The Big Five model has often been used as a variable to study how the personality traits of openness to

experience, contentiousness, extraversion, agreeableness, and neuroticism that make-up this model can affect a person's communication choices and style. For example, some recent studies have examined how the levels of each of the distinct personality traits can influence a person's continued use of Facebook, what they post to Facebook, and even their academic performance (Marshall, Lefringhausen, & Ferenczi, 2015; Mouakket, 2018; Naqshbandi, Ainin, Jaafar, & Shuib, 2017). Park and colleagues (2014) found that users' posts to Facebook could be used to measure their personality. This demonstrates that personality and Facebook are interrelated with each affecting the other. Therefore, this paper would be remiss to not include this foundational variable as moderators in order to better understand the association between social comparison orientation and proactive/reactive Facebook use since it is often a large factor in how and why people use social media sites.

Literature Review

Social Comparison Orientation

Festinger (1945) first gave name to the phenomena of social comparison when he studied and tested his hypothesis that people want to be able to assess not only their more quantifiable abilities, like physical prowess, but also their more qualitative opinions by comparing those abilities and opinions with other people's abilities and opinions. His research also found that people would rather use others that are like themselves to base their comparisons on, unless the person doing the comparing has a strong desire to be more like the different group they were comparing themselves to (Festinger, 1954). This could cause the comparer to try to shift their own opinions or work on their abilities so

that they could then match the group they desired to be a part of (Festinger, 1954).

Festinger (1945) went on to confer the idea that if the comparer found themselves lacking

when the comparison was finished, it would either cause them to become motivated to do

better or it would damage their well-being.

It was not until the early 1990s, however, that researchers "suggested that certain

types of individuals may be more inclined to engage in social comparison than others"

(Gibbons & Buunk, 1999, p. 130). This notion led Gibbons and Buunk (1999) to develop

a scale that measures a person's inclination to socially compare themselves with others.

They were able to predict a person's likelihood of social comparison based on the

person's motivations for social comparison, such as self-evaluation, self-improvement,

and self-enhancement (Gibbons & Buunk, 1999). Another feature that could help predict

a person's likelihood to use social comparison is that person's pre-established personality

traits (Gibbons & Buunk, 1999). For instance, a person with lower self-esteem is more

uncertain of themselves, so they will be more likely to use social comparison more

frequently to help develop their identity through self-enhancement (Gibbons & Buunk,

1999). Conversely, a person who has higher self-esteem and is more certain of

themselves may only need to use social comparison for self-evaluation on occasion to

reaffirm what they already feel about themselves (Gibbons & Buunk, 1999). Their scale

was found to be valid, after undergoing four experiments and emerging with a Cronbach

alpha score of .83 and was named the Iowa-Netherlands Comparison Orientation

Measure (INCOM) in honor of where the studies to test the measure were conducted

(Gibbons & Buunk, 1999). This scale should help give insight into what type of

Facebook user a person is due to explaining how likely a person is to engage in social comparison.

The prevalence of social network site use and how users decide to present themselves on these sites has changed the dynamic of social comparisons (Walther, 2007). Before computer-mediated communication became so widely used, people had much less control of how they were able to present themselves to others due to the nature of face-to-face communication. Walther (2007) discusses in his study that while self-presentation has always been important to communicators, the manner in which computer-mediated communication takes place has given them more control over the personae they are able to present. He goes on to explain that "CMC users are able to convey about themselves a much more discretionary front, better concealing that which they do not wish to convey while accentuating that which they do" (Walther, 2007, p. 2541). This aspect of computer-mediated communication has allowed Facebook users to craft very carefully what others viewing their profiles will see as their identity. These types of selective self-presentations can lead to a boost in self-esteem when viewed by the users who created them, but others who are viewing these types of carefully crafted profiles are more likely to engage in upward social comparison, which, as discussed above, can lead to negative impacts on the users' psychological well-being (Chou, & Edge, 2012; Gonzales, & Hancock, 2011; Toma, 2013).

Essentially, Social Comparison Theory posits that all people have something like an innate desire to compare themselves to others in order to develop their own self-identity (Festinger, 1954). This response is an automatic and subconscious one that can help build a person's self-image or damage it (Festinger, 1954). However, when making

self-comparisons, a person usually wants to compare themselves to someone who is similar to them so that the identity they establish by the comparison is appropriate and feasible (Festinger, 1954). The use of Facebook for social comparison can be detrimental because users often represent themselves in a more socially desirable way on Facebook. Walther (2007) explains that "as senders, CMC selectively self-present, revealing attitudes and aspects of the self in a controlled and socially desirable fashion" (p. 2539). Users do this by engaging in selective self-presentation when crafting their Facebook personae and therefore, when used by others for social comparisons, these profiles can often only be used for upward social comparisons. When users engage in upward social comparisons, they may see themselves as inferior to the comparison targets, resulting in harm done to their psychological well-being (Johnson & Knobloch-Westerwick, 2017; Steers, Wickham, & Acitelli, 2014; Batenburg & Das, 2015; Vogel, Rose, Roberts, & Eckles, 2014).

Recent studies have found that upward comparisons are used more frequently, more upward comparisons are an indicator of lower self-esteem, upward comparisons are more likely to lead to a negative effect on well-being, and the more active an upward comparison user is on the social network sites of their choice, the more influence these comparisons can have on that users' well-being (Johnson & Knobloch-Westerwick, 2017; Steers, Wickham, & Acitelli, 2014; Batenburg & Das, 2015; Vogel, Rose, Roberts, & Eckles, 2014). The study conducted by Park and Baek (2018) breaks down social comparison orientation into two distinctive groups: ability based, and opinion based. This study also demonstrates that while downward social comparisons are fewer they should also be considered when investigating how social comparisons relate to Facebook use

(Park & Baek, 2018). Park and Baek (2018) found that psychological well-being could be enhanced if opinion based social comparison was used leading to higher positive emotions felt about oneself.

None of these studies, however, consider how users with high social comparison orientation will differ in how they actively interact with Facebook compared to those users with lower social comparison orientation. The current literature does a thorough job into looking at all the ramifications of social comparison from using Facebook on user's psychological well-being, but not how this personality trait could influence how users actively interact with Facebook. The previous research gives guidelines into how people with different social comparison orientations process information and even that people use social network sites for the purpose of social comparison, but this research does not give a direction into how social comparison will influence user's proactive or reactive behaviors (Vogel, Rose, Okdie, Eckles, & Franz, 2015).

High social comparison users are more likely to engage in social comparison, so they would seem to be more likely to react to another user's post since they are looking at others' profiles anyway and low in proactive use since they are more concerned with comparing themselves to others. However, this can not be assumed since users with high social comparison may also be using selective self-presentation in order to feel better about themselves by posting their ideal selves which will lead them to high proactive behavior as well. Similarly, this can be applied to users who are low in social comparison orientation. These users seem like they would be more likely to be proactive and post content about themselves because they are not concerned with browsing other's profiles and reacting to them. The reverse of this assumption though is that these low social

comparison users have stronger social networks which cause them to react more to their friends' profiles than post their own content since they are using Facebook to maintain relationships. These fluid assumptions lead to the first research question:

RQ 1: Does social comparison orientation relate to how proactive or reactive a Facebook user will be?

Self-Esteem

Self-esteem can affect how people feel after engaging in social comparison and is a factor that can likewise be associated with how users interact with Facebook. Some of the studies that examine how Facebook affects psychological well-being investigate how users with higher self-esteem process or engage in social comparisons on social media differently than those with lower self-esteem (Cramer, Song, & Drent, 2016; Greitemeyer, 2016; Marshall, Lefringhausen, & Ferenczi, 2015). Liu, Carcioppolo, and North (2016) conclude that, "self-esteem is a personal trait which (a) plays an important role in self-evaluation and affective response, and (b) can influence how people process and interpret social comparison information" (p. 625).

Another facet of social comparison on social network use that lacks research is how a person's pre-existing psychological attributes (e.g., self-esteem) may affect their social network behaviors, how this relates to the types of social comparison they are engaging in, how this could affect their psychological well-being in the future. The study done by Batenburg and Das (2015) took a cursory look at how users who were proactive

and users who were described as "lurkers" operated differently on virtual support communities. This study, however, did not examine how pre-established psychological characteristics, such as high self-esteem, correlate to the different types of Facebook activities the user will engage in (i.e., proactive participation or reactive participation). Likewise, Jang, Park, and Song (2016) found that users who had higher self-esteem would be less likely to have the negative psychological effects from social comparison as those with low self-esteem because these users were "less likely to engage in social comparison" (p. 152). These researchers likewise posited that user with low self-esteem may try to engage in downward social comparisons to feel better about themselves but be unable to do so because of the use of selective self-presentation tactics used by others in their profiles (Jang et al., 2016).

There have been some studies that have found positive effects of social network sites for those users who do have low self-esteem. Cramer et al. (2016). found that positive affect could be felt for both low self-esteem individuals and high self-esteem individuals depending on what was their motivation for social comparisons that happened on Facebook. Low self-esteem individuals that used the downward social comparisons for self-enhancement and high self-esteem individuals who were motivated by self-improvement felt positive feelings after socially comparing themselves to other Facebook users (Cramer et al., 2016). Other effects of Facebook use that benefit individuals with lower self-esteem are not tied to social comparisons. Forest and Wood (2012) found that people with low self-esteem are more likely to feel that Facebook is a safe place where they can make social connections which will then help them have more social support and better well-being. Steinfield et al. (2008) particularized this phenomenon by stating,

"a social network site that makes it easier for lower self-esteem students to engage with others outside of their close personal networks can therefore be expected to have a larger effect for them than higher self-esteem students" (p. 443). Low self-esteem individuals may also reap the benefits of selective self-presentation by using Facebook to create profiles that are their idealized selves. This was shown in a study by Gonzales et al. (2011) that viewing one's own Facebook profile will increase self-esteem because of how idealized that version of one's self is crafted.

Once again, the previous research is important for understanding how Facebook use will affect the psychological well-being of users in relation to their self-esteem, but it is hard to pin down a clear direction of whether low (high) self-esteem individuals will be more reactive or proactive when using Facebook. Some assumptions can be made, for instance, those who proactively post on their own page frequently, while never or only occasionally responding to other users' pages, will have higher self-esteem and a lower social comparison orientation than that of users who are highly reactive on other users' pages, but never or only occasionally post to their own page. This can be assumed because users with higher self-esteem are more likely to want to fabricate their own idealized pages and are less concerned with socially comparing themselves to others; and users with lower self-esteem have a stronger desire to engage in social comparisons in order to enhance their perception of themselves based on social comparisons, so they will be more interested in viewing and reacting to other people's profiles. However, the current research lends itself to the opposite assumption as well. Lower self-esteem users will craft idealized profiles of themselves, post positive status updates, and upload filtered pictures of themselves to garner the self-esteem benefits of these activities,

whereas higher self-esteem individuals may not feel the need to post their own content because they already have confidence in their selves outside of social networks sites but will react to the content posted by others due to the desire to enhance their interpersonal relationships. This leads to the second research question:

RQ 2: Does self-esteem relate to how proactive or reactive a Facebook user will be?

Number of Facebook Friends

Another interesting area that could be associated with proactive and reactive Facebook use and personality traits of social comparison orientation and self-esteem is the difference in number of friends of users with higher self-esteem and those of users with lower self-esteem. Since the users with higher self-esteem are not in need of as many social comparison targets as those users with lower self-esteem. However, would the friends of users with higher self-esteem have to be closer in relational distance so that the users with higher self-esteem could experience the positive effects of emotional contagion with those friends, as was discussed in the study done by Liu et al. (2016). Greitemeyer (2016) found in their study that exposure to other people's number of friends was not related to decreases or increases into the observer's self-esteem. Due to the complicated and nuanced relationships users may have with their Facebook friends, the number and type of friends of Facebook users is harder to examine in this type of study. However, previous research could lead to the exploratory assumption that high

reactive users and high proactive users would have a different number of friends based on the different uses and activities being engaged in when using Facebook.

RQ 3: How does number of Facebook friends relate to how proactive or reactive a Facebook user will be?

Study One

Methodology

An online survey was conducted to answer the research questions. A questionnaire was created on Qualtrics and the survey link was provided to a convenience sample of undergraduate students.

Participants

This sample consisted of participants who were undergraduate students taking communication and media classes at a mid-sized Midwestern public university. Students were incentivized to participate through the use of extra credit in their selected class. There were originally 233 participants but 19 were removed from the study for never having used or having a Facebook account. Of the 212 Facebook users, 20 failed the attention check question, so the final sample size was 192.

Procedure

Participants were given a Qualtrics link through class websites to complete the surveys at their convenience. They were first directed to a page giving a brief outline of

how the survey was setup, that the study had been approved by the Institutional Review

Board, and that their data would be confidential. At this point participants could choose

whether or not they would like to continue, and this was understood to be their consent to

be a participant in the study. Next, they were instructed to complete the Rosenberg Self-

Esteem scale to gauge level of self-esteem in each of the participants. Following the

Rosenburg Self-Esteem scale was the Social Comparison Orientation Scale. A Facebook

use filter was completed next to ensure that only participants that were Facebook users or

had been Facebook users in the past would complete the questions measuring proactive

and reactive Facebook use. If participants answered the filter question negatively they

were directed to the demographics page and those who answered positively were led to

the proactive/reactive survey. In the proactive/reactive survey there was a question for

participants to fill out how many Facebook friends they had in order to gather data for

research question three. Once they completed the scales that measured their specific

Facebook usage to determine their levels of reactive participation and proactive

participation, they were sent to a separate page to answer questions on demographics.

Measures

Social Comparison Orientation Scale (INCOM). Participants' social comparison

orientation was measured by an adapted Iowa-Netherlands Comparison Orientation Scale

(see Appendix A). Participants were asked to indicate their levels of agreement with 11

statements on a 7-point Likert-type, scale with 1 = *strongly agree* and 7 = *strongly*

disagree. The scale includes questions, such as, "I often compare myself with others with respect to what I have accomplished in life," and, "I am not the type of person who compares often with others" (reverse-coded). The scale was reliable, with Cronbach's alpha = .83. The data was recoded so that a higher number indicated a higher level of comparison orientation.

Self-Esteem. Participants' self-esteem was measured by an adapted Rosenberg Self-Esteem Scale (see Appendix B). Participants were asked to indicate their levels of agreement with 10 statements on a 7-point Likert-type scale with 1 = *strongly agree* and 7 = *strongly disagree*. The Rosenberg Self-Esteem Scale includes questions like, "On the whole, I am satisfied with myself," and, "At times I think I am no good at all" (reverse-coded). The scale was reliable, with Cronbach's alpha = .91. The data was recoded so that a higher number represented a higher level of self-esteem.

Proactive use of Facebook. A six-item scale was created to measure proactive use of Facebook (see Appendix C). Sample items included "I often post pictures on Facebook," "I like to post status updates about my day," and "I do not often share personal information on Facebook" (reverse coded). All the items were measured on a 7-point scale (1 = strongly agree, 7 = strongly disagree). The six-item proactive scale, however, had low reliability (Cronbach's alpha = .49). After removing the item "I don't pay much attention to what my Facebook friend's post", the five-item scale had an acceptable reliability (Cronbach's alpha = .70). That data was recoded so that a higher number indicated more proactive use of Facebook.

Reactive Use of Facebook. An eight-item scale was created to measure reactive use of Facebook (see Appendix C). Sample items included: "I make an effort to comment on my friends' posts," "Most of my time on Facebook is spent pressing 'react' buttons," and "I don't pay much attention to what my friends post" (reverse coded) (1 = strongly agree, 7 = strongly disagree). The scale was reliable (Cronbach's alpha = .78). The data was recoded so that a higher number indicated more reactive use of Facebook.

Number of Facebook Friends. Number of friends was measured by an open-ended question "How many Facebook friends do you have?" Most of the participants' answers were numerical. For non-numerical answers, the data were numerically coded. For instance, "about 200" was coded as 200, "500-600" was coded as 550, and "a lot" was coded as missing.

Results

Descriptive Statistics

Of the final sample of 192 Facebook users 121 (63%) were females, 70 (36.5%) were males, and 1 was (.5%) transgender. Participants' average age was 26.52 (Min = 18, Max = 60, SD = 8.73). The participants were also primarily Caucasian (117, 60.9%); other ethnicities included Black/African Americans (48, 25%), Asian/Asian Americans (9, 4.7%), Multiracial (6, 3.1%), Other (4, 2.1%), Mexican/Mexican American (3, 1.6%), Hispanic/Latino (2, 1.0%), and I prefer not to respond (3, 1.6%). The proactive use scale had an average score of 2.69 (SD = 1.19) while the average score of the reactive use scale

was 4.59 (SD = 1.20). The number of Facebook friends ranged from zero to five thousand with an average of 754.10 (SD = 802.24). The social comparison orientation scale had an average score of 4.81 (SD = .98). The self-esteem scale had an average score of 5.26 (SD = 1.16). See Table One for Descriptive statistics on the following variables: self-esteem, comparison orientation, proactive use of Facebook, reactive use of Facebook, and number of Facebook friends.

Research Questions

Pearson correlation analysis was conducted for the research questions. Two-tailed tests of statistical significance were used to assess the correlation between all the variables. In response to the first research question, comparison orientation was positively associated with reactive use of Facebook (r = .27, p =.00), but not proactive use of Facebook (r = .10, p = .20). It was found that as comparison orientation increased so did reactive use of Facebook. In response to question two self-esteem was not associated with proactive use (r = .04, p = .44) or reactive use (r = -.14, p = .07) of Facebook. In response to the third question, number of Facebook friends was positively associated with both proactive use (r = .28, p = .00) and reactive use (r =.23, p = .003) of Facebook. It was found that as number of friends increased so did the amount of both proactive and reactive use. See Table Two for the results of the correlation analysis.

Discussion

Verduyn and his fellow researchers (2015) examined how different user types affected how social network impacted psychological well-being and this thesis hopes to

continue that idea but from a different angle. The previous researchers used the terms "active" and "passive" to describe the way users were interacting with Facebook (Verduyn et. al., 2015). This only gives a small portion of the picture, however, since active use encompassed so many different actions that could be participated in on Facebook. This thesis took the premise of active use and operationalized the concept into proactive and reactive use to better understand how active use can be a way that people use Facebook to social compare themselves to others. Findings from this thesis will help to enlighten other research on how active Facebook use, which was previously shown to be neutral in its effects on well-being, can be detrimental as well if it is done reactively leading to users engaging in social comparisons. As shown in this thesis there is a relationship between proactive and reactive use which could lead to a better understanding of how users interact with Facebook in general through the breaking down of active use into these two concepts. Further study needs to be done to better determine the amount of time that is spent between proactive and reactive use to develop a deeper understanding of how reactive use is potentially harmful to well-being. It would also be intriguing to compare the level of affect from reactive use to the affect of passive use to develop a deeper knowledge of how these concepts could work together when a user interacts with Facebook both actively and passively and how this could potentially do harm to users' well-being.

Data from this thesis uncovered that there is a significant correlation between social comparison orientation and reactive Facebook use. Users who are more prone to socially compare are also more likely to use Facebook reactively which can lead to more comparison behavior. The finding was in-line with the studies that showed a tendency for

high social comparison on Facebook and how people are using Facebook to socially

compare themselves to others even though these comparisons are to selectively self-

presented idealized profiles (Johnson & Knobloch-Westerwick, 2017; Steers, Wickham,

& Acitelli, 2014; Batenburg & Das, 2015; Vogel, Rose, Roberts, & Eckles, 2014). This

finding of this thesis helps validate the need to better understand why certain people use

Facebook the way they do and to develop ways to lessen the negative impacts of

Facebook on well-being. A way to expand this idea would be to try and determine

whether the relationship is correlational or causal. Are social comparison orientation and

self-esteem affecting the way people use Facebook causing a feedback loop of negative

well-being or is Facebook causing negative well-being which affects the way people use

Facebook continuing that detrimental cycle?

Most previous research has found that in general Facebook use negatively impacts

self-esteem. It was interesting to see that in this case self-esteem was not related to how

people use Facebook. However, this could be due to the limitations of this thesis. For

example, this was a small convenience sample of college undergraduates that were

primarily Caucasian females in their mid-twenties and that is not representative of the

population so with a more representative sample a different result may be found. This

area of study needs to be examined further to get a better understanding of how self-

esteem affects Facebook use to get a deeper understanding of how impactful Facebook

truly is on self-esteem. This will expand the previous research and allow researchers,

users, and social network platforms to get a better grasp on how self-esteem affects

Facebook use and vice versa. This idea can also be related to the "Facebook fatigue"

principle studied by Cramer and colleagues and could be tested to see which type of user

is more likely to experience "Facebook fatigue" (2016). Since it was found in that study that "low self-esteem was significantly and positively associated with Facebook fatigue," this result could then give more insight into which user also has lower self-esteem (Cramer et al., 2016, p. 743).

The number of Facebook friends was found to be positively and significantly related to both proactive and reactive users. This could be due to the different reasons the different types of users want or acquire Facebook friends. It could be that proactive users tend to be more outgoing and in general have more friends in their real life which would lead to more friends online. While reactive users have a higher social comparison, so they want more online friends to have more social comparison targets to build their self-identity. Greitemeyer (2016) examined how differences in amounts of friends could impact self-esteem between Facebook users and found that there was no correlation. However, an area that could develop this line of research further would be to investigate if reactive users who are high in social comparison receive social support from their online friends that could encourage them to be more proactive in their Facebook use. This change in Facebook use could then lead to lower social comparison and improved well-being.

To sum up, in Study One, it was found that high social comparison orientation was statistically significant in relation to higher levels of reactive Facebook use. However, different personality traits may moderate this association along with providing some other interaction effects when used to better understand the association between social comparison orientation and both reactive and proactive Facebook use. The different personality traits that make up the Big Five model have been used in some

previous studies related to social network use but are not clear on how these personality traits may affect both social comparison orientation along with proactive and reactive Facebook use (Amichai-Hamburger & Vinitzky, 2010; Correa, Hinsley, & Gil de Zúñiga, 2010; Marshall, Lefringhausen, & Ferenczi, 2015; Ryan & Xenos, 2011; Tasi, Chang, Chang, & Chang, 2017). The addition of the personality traits might further explain why Facebook users with high social comparison orientation engage in more reactive use if there is a distinct difference in these personality traits compared to the personality traits of users who have lower social comparison orientation. Also, the inclusion of the Big Five model traits as moderating variables may help to provide a significant relation for users with low social comparison orientation being more proactive in their Facebook use. These personality characteristics may also explain the relationship between both proactive use and reactive use to number of Facebook friends.

Literature Review

Big Five Personality Model

Personality has been a topic of interest for hundreds of years. Sir Francis Galton first realized the importance of this topic by consulting a dictionary (Goldberg, 1993). Galton's work was then followed by Allport and Odbert in 1936 who also examined the dictionary to see the wide variety of words used to describe personality and how often these words would overlap with one another (Goldberg, 1993). Norman followed the footsteps of previous personality researchers in 1967 and again used the dictionary to further expand this list of words that describe personality (Goldberg, 1993). However, L.

L. Thurston who was a bit ahead of his time analyzed the Galton list by having a group of

1,300 coders examine the 60 different adjectives (Goldberg, 1993). It was found in this

study by Thurston that there were five common factors that all 60 of these adjectives

could be categorized into (Goldberg, 1993). Thurston did not follow up on this study and

instead chose to reanalyze a scale developed by Guilford and it was from this that

Thurston developed the seven factored Thurstone Temperament Schedule (Goldberg,

1993). Raymond B. Cattell in 1943 carried on Thurston's principles by first examining a

list of "approximately 4,500 trait-descriptive terms included in the Allport and Odbert

(1936) compendium" (Goldberg, 1993, p. 26). Cattell used this to develop a list of "35

highly complex bipolar variables, each pole of which included a composite set of

adjectives and phrases" (Goldberg, 1993, p. 26).

Donald Fiske in 1949 was the first to label the five factors (Goldberg, 1993). He

(1993) labeled them as "Confident Self-Expression (I), Social Adaptability (II),

Conformity (III), Emotional Control (IV), and Inquiring Intellect (V)" (p. 27). However,

like his predecessor, Thurston Fiske did not continue his research on these findings

(Goldberg, 1993, p. 27). Other early scholars in this field include Tupes and Christal who

"found five replicable factors" in their Air Force studies between 1954 and 1961

(Goldberg, 1993, p. 27). Borgatta and Smith carried on the work of Tupes and Christal in

the mid sixties (Goldberg, 1993). Borgatta labelled his five factors as "Assertiveness (I),

Likability (II), Responsibility (III), Emotionality (IV), and Intelligence (V)" (Goldberg,

1993, p. 27). Smith on the other hand labelled his five factors as "Extraversion (I),

Agreeableness (II), Strength of Character (III), Emotionality (IV), and Refinement (V)"

(Goldberg, 1993, p. 27).

However, while these scholars were finding the five-factor model to be a robust and accurate measurement of personality there were some critics. The first critic was Warren Norman in 1967 who felt that the five-factor model was not comprehensive enough (Goldberg, 1993). Norman wanted to incorporate more of the adjectives Allport and Odbert had complied in their list along with breaking out personality into more categories such as; states, traits, and roles (Goldberg, 1993). Norman designed a study that would have tested this but never actually did the study himself, but it was done by Goldberg and found to be inaccurate (Goldberg, 1993). John Digman also tried to prove that there were more factors than just the five and tried to expand on Cattell's work (Goldberg, 1993). Digman at first found that there were at least ten factors for children and possibly more than that for adults (Goldberg, 1993). However, before Digman presented this analysis to his class he rechecked his work and found that there were clerical errors in his matrices (Goldberg, 1993). When Digman fixed these errors, it was found that there were in fact only five factors in personality (Goldberg, 1993). Both Lewis Goldberg and Dean Peabody were also critics of the five-factor model (Goldberg, 1993). Peabody was slightly different in his dissent, compared to other critics, because he felt that there were only three factors instead of five (Goldberg, 1993). Goldberg worked with both Norman and Peabody and at first was a critic of the five-factor model but after extensive testing to disprove it he was only able to keep replicating it (Goldberg, 1993). This then turned Goldberg into a proponent for the five-factor model and he has continued to test the theory and prove its merit (Goldberg, 1993).

As demonstrated in the paragraphs above the five-factor model has gone through quite a few names for the five factors. The Big Five model now has the traits names of

Openness to Experience (usually referred to as just Openness), Conscientiousness, Extraversion, Agreeableness, and Neuroticism (Goldberg, 1993). There has been some dispute about the factor of Openness (Goldberg, 1993). It has undergone the most name changes throughout this theory's history and was recently categorized as Culture (Goldberg, 1993). This disagreement about how to properly categorize Openness has as Goldberg states, "a scientific embarrassment" (Goldberg, 1993, p. 27). It is understood that each of these factors is a broad category that incorporates "hundreds if not thousands of different traits" (Goldberg, 1993, p. 27). This understanding could explain why there have been so many critics that think the five-factor model is too small a category system to fully represent and measure personality. In the following sections each factor from the Big Five model will be presented with some of the traits that are associated with it, how this relates to current social network research, and the research questions that the current study will address.

Openness to Experience

Goldberg (1993) described Openness with the traits "imagination, curiosity, and creativity" and with the contrasting traits of "shallowness and imperceptiveness" (p. 27). Current studies have found that Openness is positively related to academic performance while not being associated with Facebook use (Naqshbandi et al., 2017). However, an earlier study done by Correa et al. (2010) found that Openness was positively associated with social network use. This article in fact stated, "people who use social media applications more frequently tend to be more innovative and creative" (2010, p. 250). It could be argued that because this study is older that people who have a higher level of Openness were using social network more at that time because it was new and therefore,

they were innovative for using these new technologies. A counter argument to that idea

comes from a more recent meta-analysis of the Big Five and social network use, which

found that people who are higher in Openness were higher in social networking site game

playing, using social network sites for information seeking, posting more photos, and

posting more status updates (Liu & Campbell, 2017). In this study Openness is also

related to the traits of having an "interest in art and fantasy", "curiosity", and "novelty

seeking" when engaged with the real world and when in relation to social network

specifically they are more likely "to try all social media activities" (Liu & Campbell,

2017, p. 230). An early study done by Amichai-Hamburger and Vinitzky (2010) also

found that those who are high in Openness are likely to use a wide variety of social

network site features. Even with these findings it could be that an individual with high

Openness may experience different levels of social comparison and therefore affect how

they chose to use Facebook. These mixed results on amount of social network site use

and the results that found individuals who are high in Openness are likely to use a

multitude of social networking features leads to the research question:

RQ 1: Will the personality trait of Openness moderate the relationship

between social comparison orientation and users' proactive/reactive

Facebook use?

Conscientiousness

Individuals who are high in Conscientiousness are defined as being organized, thorough, and reliable while those low in Conscientiousness tend to be careless, negligent, and unreliable (Goldberg, 1993). Ryan and Xenos (2011) found that there was a "negative correlation between time spent of Facebook per day and Conscientiousness" (p. 1662). This finding was replicated in more recent studies as well (Liu & Campbell, 2017). However, Naqshbandi et al. (2017) found that there was neither a positive or negative relationship between Conscientiousness and Facebook use but did find that higher levels of Conscientiousness relate to higher levels of academic performance. These findings, including the null finding, could be because individuals high in Conscientiousness are often task oriented and do not like to engage in activities that waste time. However, while these results are mostly uniform, they do not explain how differing levels of Conscientiousness can affect the way users do interact with Facebook when they use it, nor do they explain how Conscientiousness may interact between the variables of social comparison orientation and proactive/reactive Facebook use leading to the research question:

RQ 2: Will the personality trait of Conscientiousness moderate the relationship between social comparison orientation and users' proactive/reactive Facebook use?

Extraversion

Extraversion incorporates the traits of "talkativeness, assertiveness, and activity level" while the contrast to this Introversion is associated with "silence, passivity, and reserve" (Goldberg, 1993, p. 27). Extraversion is often the most studied personality trait and it seems to be the most consistent as well when used to study social network use. Amichai-Hamburger and Vinitzky (2010) found that Extraversion was negatively related to using personal information on Facebook. Extraversion has been found in multiple studies to be positively related to Facebook use with a tendency to us it as a tool to communicate with others (Correa et al., 2010; Ryan & Xenos, 2011, Naqshbandi et al., 2017). Behaviors that are outlined as Facebook habits of high Extraversion are "Facebook's active social features, such as likes and messages" (Tsai et al., 2017 p. 478). High Extraversion is also positively related with using "likes, messages, likes on photos, and comments" and "tagged photos/videos" (Tsai et al., 2017, p. 478). Liu and Campbell (2017) also found that Extraversion was the personality trait that had the most positive associations with a variety of social network site uses, including interacting on social network sites and posting photos. These results show that individuals who are high in Extraversion are more likely to be social network site users and that they engage in a lot of different activities while using these sites. However, these studies do not break down active use into the proactive/reactive categories the current study is examining, and these previous results do not explain the relationship these variables have with social comparison orientation which leads to the research question:

RQ 3: Will the personality trait of Extraversion moderate the relationship between social comparison orientation and users' proactive/reactive Facebook use?

Agreeableness

Individuals who have higher levels of Agreeableness tend to be associated with characteristics like "kindness, trust, and warmth," while those low in Agreeableness are more likely to be associated with characteristics like "hostility, selfishness, and distrust" (Goldberg, 1993, p. 27). Naqshbandi et al. (2017) found that Agreeableness was positively associated with Facebook use. In the study done by Amichai-Hamburger and Vinitzky (2010) it was found that Agreeableness was negatively associated with the usage of page features and a curvilinear relationship was present when examining the behavior of posting photos. Agreeableness has also been found to be positively associated with using "the check in feature and sharing their daily lives with their friends" (Tsai et al., 2017, p. 478). In the meta-analysis done by Liu and Campbell (2017), Agreeableness was also found to be positively related to posting photos but was negatively related to playing games on social network sites. These results show that Agreeableness is positively related to Facebook use in general and several specific types of Facebook activities, but once again these studies do not break down the activities into proactive/reactive use, and it is unclear how Agreeableness could moderate these usage types in relation to social comparison orientation which leads to the research question:

RQ 4: Will the personality trait of Agreeableness moderate the relationship between social comparison orientation and users' proactive/reactive Facebook use?

Neuroticism

Neuroticism is characterized by the traits of "nervousness, moodiness, and temperamentality" (Goldberg, 1993, p. 27). The contrasting side to Neuroticism is called Emotional Stability and usually means that the individual will experience less anxiety and stress (Naqshbandi et al., 2017). Studies have shown that there is a positive relationship between Neuroticism and social network site use (Correa et al., 2010; Ryan & Xenos, 2011; Liu & Campbell, 2017). Ryan and Xenos (2011) found that high Neuroticism users were more likely to post on their Facebook wall than to send messages or post comments. This was found again in Liu and Campbell's (2017) meta-analysis that found Neuroticism to only be associated (positively) with social network site status updates. However, it was discussed in Seidman's (2013) study that users who have higher levels of Neuroticism "use Facebook as a passive way to learn about others" (p. 405). Once again these findings do not break down the social network site activities into proactive/reactive use that is one of the key variables of the current study and there is no link to how Neuroticism can affect the relationship between social comparison orientation and proactive/reactive use which leads to the research question:

RQ 5: Will the personality trait of Neuroticism moderate the relationship between social comparison orientation and users' proactive/reactive Facebook use?

Number of Facebook Friends

Along with examining the interaction effect of the Big Five model personality traits and social comparison orientation on proactive/reactive Facebook use, the Big Five model will also be used to examine the association that was found between the number of Facebook friends and proactive/reactive Facebook use. In Study one, it was found that both proactive and reactive Facebook use were positively associated with number of Facebook friends. The Big Five model has been used in previous studies in relation to number of Facebook friends and have found varying results between personality traits (Amichai-Hamburger & Vinitzky, 2010; Liu & Campbell, 2017; Tsai, Chang, Chang, & Chang, 2017). Amichai-Hamburger and Vinitzky (2010) found that contrary to one of their hypotheses that agreeableness was not associated with number of Facebook friends and called for more research to be done to better understand the result but did find that conscientiousness was positively related to higher number of Facebook friends. The current study could help to illuminate this result with the interaction effect between the Big Five model, number of friends, and proactive/reactive Facebook use. Tsai et al. (2017) and Liu and Campbell (2017) both found that extraverts were more likely to have a higher number of friends. The previous result of this study that both proactive and reactive use is associated with more Facebook friends could be more impactful if there is

a finding that this result could be moderated by different personality factors which leads

to the research question:

RQ 6: Will the different personality traits moderate the relationship between number of Facebook friends and users' proactive/reactive Facebook use?

Study Two

Methodology

An online survey was conducted to answer the research questions in relation to

how the Big Five model could act as a moderating variable between social comparison

orientation and proactive/reactive Facebook use along with number of Facebook friends

and proactive/reactive use. A questionnaire was created on Qualtrics and the survey link

was provided to a convenience sample of undergraduate students.

Participants

This sample consisted of participants who were undergraduate students taking

communication and media classes at a mid-sized Midwestern public university. Students

were incentivized to participate through the use of extra credit in their selected class.

There were originally 170 participants, and all indicated that they had a Facebook

account. Of the 170 Facebook users, 30 failed the attention check question and 16 were

removed due to incomplete surveys so the final sample size was 124.

Procedure

Participants were given a Qualtrics link through class websites to complete the

surveys at their convenience. They were first directed to a page giving a brief outline of

how the survey was setup, that the study had been approved by the Institutional Review

Board, and that their data would be confidential. At this point participants could choose

whether or not they would like to continue, and this was understood to be their consent to

be a participant in the study. Next, they were instructed to complete the Big Five

Inventory Scale to gauge levels of each of the Big Five personality traits (Openness,

Conscientiousness, Extraversion, Agreeableness, and Neuroticism) in each of the

participants. Following the Big Five Inventory Scale was the Social Comparison

Orientation Scale (INCOM). A Facebook use filter was completed next to ensure that

only participants that were Facebook users or had been Facebook users in the past would

complete the questions measuring proactive and reactive Facebook use. If participants

answered the filter question negatively, they were directed to the demographics page and

those who answered positively were led to the proactive/reactive survey. They were then

brought to a modified version of the Facebook Usage Scale from study one. This updated

survey had some questions with clearer wording to increase internal validity from study

one. The scale measuring number of Facebook friends was also modified to be multiple

choice instead of participants filling in their own formulated response. This was done to

be able to quantify the number of Facebook friends in a categorized way compared with

study one. Once they completed the scales that measured their specific Facebook usage

to determine their levels of reactive participation and proactive participation, they were

sent to a separate page to answer questions on demographics.

Measures

Social Comparison Orientation Scale (INCOM). Participants' social comparison

orientation was measured by an adapted Iowa-Netherlands Comparison Orientation Scale

(see Appendix A). Participants were asked to indicate their levels of agreement with 11

statements on a 7-point Likert-type, scale with 1 = *strongly disagree* and 7 = *strongly*

agree. The scale includes questions, such as, "I often compare myself with others with

respect to what I have accomplished in life," and, "I am not the type of person who

compares often with others" (reverse-coded). The scale was reliable, with a Cronbach's

alpha = .86.

Proactive use of Facebook Modified. A six-item scale was created to measure proactive

use of Facebook (see Appendix D). Sample items included "I often post pictures on

Facebook," "I like to post status updates about my day," and "I do not often share

personal information on Facebook" (reverse coded). All the items were measured on a 7-

point scale (1 = strongly disagree, 7 = strongly agree). The six-item proactive scale,

however, had a low reliability (Cronbach's alpha = .57). After removing the item "I don't

pay much attention to what my Facebook friends' post", the five-item scale had an

acceptable reliability (Cronbach's alpha = .79).

Reactive Use of Facebook. An eight-item scale was created to measure reactive use of Facebook (see Appendix D). Sample items included: "I make an effort to comment on my friends' posts," Most of my time on Facebook is spent pressing 'react' buttons," and "I don't pay much attention to what my friends post" (reverse coded) (1 = strongly disagree, 7 = strongly agree). The scale was reliable (Cronbach's alpha =.79)

Big Five. Participants' Big Five personality traits were measured by the Big Five Inventory scale (see Appendix E). Participants were asked to indicate their levels of agreement with 44 statements on a 7-point Likert-type scale with answers ranging, with 1 = *strongly disagree* and 7 = *strongly agree*. The Big Five Inventory Scale includes questions like, "I am satisfied reliable," and, "I tend to be disorganized" (reverse-coded). Each of the five personality types were broken out into their own individual scales in order to use each as a moderating variable independently. Openness had a scale of ten items and was reliable with Cronbach's alpha = .79. Conscientiousness had a scale of nine items and was reliable with Cronbach's alpha = .77. Extraversion had a scale of nine items and was reliable with Cronbach's alpha = .77. Agreeableness had a scale of nine items and was reliable with Cronbach's alpha = .76. Neuroticism had a scale of eight items and was reliable with Cronbach's alpha = .86.

Number of Facebook Friends. A twelve-item scale was created to measure number of Facebook friends (see Appendix F). The scale started at 0 to 50 friends then went 51 to 100 before continuing in increments of 99 until reaching over 1,000.

Results

Descriptive Statistics

Of the final sample of 124 Facebook users 80 (65%) were females, 41 (33.3%) were males, 1 (.8%) was genderfluid, and 1 (.8%) selected other. Participants' were mostly between the ages of 21 – 25 (60 participants, 48.4%), the 18 – 20 age group accounted for 16.9% (21) of the participants, the 26 – 30 age group accounted for 15.3% (19) of the participants, the 31 – 35 age group accounted for 10.5% (13) of the participants, the 36 – 40 age group accounted for 4.8% (6) of the participants, both the 41 – 45 and the 46 – 50 age groups accounted for 1.6% (2) of the participants, and the 51 or older age group accounted for .8% (1) of the participants. The participants were also primarily Caucasian (80, 64.5%); other ethnicities included Black/African Americans (25, 20.2%), Asian/Asian Americans (6, 4.8%), Multiracial (3, 2.4%), Other (1, .8%), Mexican/Mexican American (1, .8%), Hispanic/Latino (1, .8%), and I prefer not to respond (6, 4.8%). The proactive use scale had an average score of 2.31 (SD = 1.18) while the average score of the reactive use scale was 4.04 (SD = 1.28). The number of Facebook friends had a mean score of 6.68 with the sixth option representing between 401 to 500 friends and the seventh option representing between 501 to 600 friends (SD =3.67). The social comparison orientation scale had an average score of 4.76 (SD = 1.00). The openness scale had an average score of 4.90 (SD = .86). The conscientiousness scale had an average score of 4.95 (SD = .84). The extraversion scale had an average score of 4.37 (SD = 1.23). The agreeableness scale had an average score of 5.27 (SD = .80). The neuroticism scale had an average score of 4.13 (SD = 1.19). See Table Three for

Descriptive statistics on the following variables: comparison orientation, proactive use of Facebook, reactive use of Facebook, openness, conscientiousness, extraversion, agreeableness, neuroticism, and number of Facebook friends.

Research Questions

Hayes' Process Macro (version 3.1) was used to analyze the data. To investigate RQ1-5, 10 regression analyses were conducted. In each regression model, either proactive or reactive use of Facebook was the dependent variable, social comparison orientation as the independent variable, and each one of the Big Five variables as the moderator. To control for the effects of demographic, gender, age, race, and number of Facebook friends variables were entered as covariates.

To investigate RQ6, 10 regression analyses were conducted, with either proactive or reactive use of Facebook as the dependent variable, number of Facebook use as the independent variable, and each of the five personality variables as the moderator. Model 1 was used to analyze the two-way interaction between social comparison and each personality variable. To control for the effects of demographic, gender, age, and race variables were entered as covariates.

In response to the first research question, openness was not found to moderate the relationship between social comparison orientation and type of Facebook user (proactive user [*effect* =.08, P = .49] or reactive user [*effect* = .02, P = .87]). In response to the second research question, conscientiousness was not found to moderate the relationship between social comparison orientation and type of Facebook user

(proactive user [*effect* =.02, P = .84] or reactive user (*effect* = -.09, P = .46]). In response

to the third research question, extraversion was not found to moderate the relationship

between social comparison orientation and type of Facebook user (proactive user [*effect* =

-.05, P = .53] or reactive user [*effect* = -.08, P = .32]). In response to the fourth research

question, agreeableness was not found to moderate the relationship between social

comparison orientation and type of Facebook user (proactive user [*effect* = -.01, P = .94]

or reactive user [*effect* = -.17, P = .29]). In response to the fifth research question,

neuroticism was not found to moderate the relationship between social comparison

orientation and proactive Facebook user type (*effect* = .09, P = .27) but did moderate the

relationship between social comparison orientation and reactive user type (*effect* = .29, P

= .001]). The interaction plot indicated that the effect of social comparison orientation on

reactive use was positive for the individuals with high neuroticism, whereas the effect of

social comparison orientation on reactive use was negative for the individuals with low

neuroticism. See Figure One for the interaction plot between social comparison

orientation and neuroticism on reactive use and Table Four for regression results. In

response to the sixth research question, only extraversion was found to moderate the

relationship between number of Facebook friends and reactive Facebook user type (*effect*

= -.07, P = .007]). The interaction plot indicated that the effect of number of friends on

reactive use was positive for the individuals with low extraversion, whereas the effect of

number of friends on reactive use was negative for individuals with high extraversion.

See Figure Two for the interaction plot between number of Facebook friends and

extraversion on reactive use of Facebook and Table Five for regression results.

Discussion

Personality attributes have long been examined to better understand why people communicate the way that they do. Communication research is starting to examine the effects of how personality attributes influence how people communicate through social network sites. Marshall, Lefringhausen, and Ferenczi (2015), for example, used the Big Five model, self-esteem, and narcissism to better understand why people discussed certain topics in their status updates on Facebook to better understand this relationship. That study discovered that users with different personality traits will write different types of Facebook status updates (Marshall et al., 2015). It is important to understand this relationship instead of just how social network sites affect users' well-being because without understanding both sides of this issue it will never be fully clear how these relationships work in tandem. This thesis has sought to continue the research on how personality traits will affect the relationship between social comparison orientation and Facebook user type along with number of Facebook friends and Facebook user type.

While not all moderations in the research questions were found to be significant, this study found that there was a significant interaction effect between neuroticism and social comparison orientation on reactive user type. Specifically, neuroticism moderated the relationship between social comparison orientation and reactive Facebook use such that the effect of social comparison orientation on reactive use was positive for the individuals with high neuroticism, whereas the effect of social comparison orientation on reactive use was negative for the individuals with low neuroticism. Interestingly, individuals who are high in both variables are more likely to engage in reactive use of Facebook than other individuals. This finding is in line with what was found in

Seidman's (2013) study that higher neurotic individuals are less likely to use Facebook to craft profiles that educate their peers about their own lives, but these individuals are instead using Facebook to learn about their peers. With the relationship between neuroticism and social comparison orientation being positive and significant, individuals who high in both variables are probably using Facebook as a tool to learn about their peers and while doing so they are also likely to be engaging in social comparison, which as other studies have found could be harmful to their well-being (Johnson & Knobloch-Westerwick, 2017; Steers, Wickham, & Acitelli, 2014; Vogel, Rose, Roberts, & Eckles, 2014; Vries & Kühne, 2015).

The interaction analysis also indicates that users who are high in social comparison orientation but low in neuroticism have low levels of reactive use. This finding could demonstrate that users who are more emotionally stable might also be using Facebook for social comparison but are more likely to use it for presenting themselves to others. Future studies could continue this line of research by investigating specific reactive user activities to examine the differences and similarities between participants who are higher in social comparison orientation, reactive user type, and neuroticism as compared to participants who are higher in social comparison orientation but lower in reactive user type and neuroticism. Researchers would need to have participants list out exactly what activities they are engaging in on Facebook and getting participants to log how often they are doing these activities. These logs could then be broken down into different reactive activities to see if there is a difference in the specific activities the different two categories of participants are engaging in.

Meanwhile, the study suggests that the effect of the interaction between number of Facebook friends and extraversion on reactive Facebook use is also significant. The finding suggests that while both number of Facebook friends and extraversion were significant positive predictors of reactive use of Facebook, the effect of number of Facebook friends on reactive use works in different directions for individuals with different levels of extraversion. It seems that individuals who have a lot of Facebook friends but score low in extraversion are most likely to be engaged in reactive Facebook use. So, for people who are introverts in real life but "sociable" in cyberspace, they are more likely to react to their cyberspace friends' social network messages than other individuals. This finding could be because those lower in extraversion are able to use Facebook to socially connect but are still going to be more likely to respond to friends' posts than to make their own original posts due to the personality characteristics that make up extraversion. On the contrary, individuals who are higher in extraversion are more likely to have more Facebook friends but may in general react to social network messages less because they do not need the social interaction.

The interaction between extraversion and number of Facebook friends is consistent with previous research, which suggests that extraverted users will have a higher number of Facebook friends and provides insight into how these variables affect the type of Facebook user a person might be (Liu & Campbell, 2017; Tsai et al., 2017). It also correlates with Seidman's (2013) point that Facebook is often a tool used to maintain and form relationships. Future research in this area could investigate if these assumptions are true by surveying Facebook users who range in levels of extraversion but have a high number of friends and are different in their reactive Facebook use by examining where

the participants' friends are initially being made. If the individuals who are higher in

extraversion are initially meeting their Facebook friends in real life, then friending them

because that is a social norm but not engaging much with them on cyberspace because

they do not need the social interaction it would help to solidify the previous findings. The

opposite of this would also be helpful, for if individuals who are lower in extraversion are

initially meeting their Facebook friends in cyberspace to have social interaction and are

demonstrating reactive Facebook use to maintain the relationships.

Limitations and Conclusion

There were a few limitations in this study that should be addressed. As mentioned

previously, the study used a convenience sample that is not representative of the

population. Future studies should seek to have more males participate and also include

older participants to get a better understanding of how social comparison and self-esteem

affect Facebook user type in those demographics. Another issue is that the proactive and

reactive Facebook use measure was created for this study and needs more testing to

enhance its reliability and validity. There was also a smaller number of participants in the

second study. The limited number of participants in the second study could have caused

the data to not be significant since there was not a large enough amount of data collected.

If a larger pool of participants could be found the results from the second study of this

thesis may be found to be different. Also, all the data in this study was collected through

self-reporting which is not always accurate. A longitudinal Facebook use diary with

ability to access participants' actual Facebook accounts was suggested but was out of the

scope of this study.

Despite the aforementioned limitations, this study provided some insight into the relationship between social comparison orientation, self-esteem, the Big Five Model, and number of Facebook friends, and Facebook user type. It was found in Study one that as comparison orientation increased so did reactive use of Facebook and that as number of friends increased so did the amount of both proactive and reactive use. Study Two furthered this by finding that neuroticism moderated the relationship between social comparison orientation and reactive user type and that extraversion was found to moderate the relationship between number of Facebook friends and reactive Facebook user type. These exploratory ideas, if continuing research ensues, could be able to enhance the knowledge of how Facebook affects users and how users' attributes such as social comparison orientation, self-esteem, and personality traits affect how Facebook is used. This relationship will continue to shine light on how social network sites can be used differently by people with varying personality characteristics and how to best understand how these different uses then affect the users.

References

Amichai-Hamburger, Y., & Vinitzky, G. (2010). Social network use and personality. *Computers in Human Behavior, 26*, 1289-1295.

Batenburg, A., & Das, E. (2015). Virtual support communities and psychological well-being: The role of optimistic and pessimistic social comparison strategies. *Journal of Computer-Mediated Communication, 20*(6), 585-600.

Burke, M., & Kraut, R. E. (2016). The relationship between Facebook use and well-being depends on communication type and tie strength. *Journal of Computer-Mediated Communication, 21*(4), 265-281. doi:10.1111/jcc4.12162

Chan, E., & Sengupta, J. (2013). Observing flattery: A social comparison perspective. *Journal of Consumer Research*, *40*(4), 740-758

Chou, H. G., & Edge, N. (2012). "They are happier and having better lives than I am": The impact of using Facebook on perceptions of others' lives. *Cyberpsychology, Behavior, and Social Networking, 15*(2), 117-121. doi:10.1089/cyber.2011.0324

Correa, T., Hinsley, A. W., & Gil de Zúñiga, H. (2010). Who interacts on the Web?: The intersection of users' personality and social media use. *Computers in Human Behavior*, *26*, 247-253.

Cramer, E. M., Song, H., & Drent, A. M., (2016). Social comparison on Facebook: Motivation, affective consequences, self-esteem, and Facebook fatigue. *Computers in Human Behavior, 64*, 739-746.

Facebook Newsroom (2018). *Company Info*. Retrieved October 19, 2018, from http://newsroom.fb.com/company-info/.

Fardouly, J., Diedrichs, P. C., Vartanian, L. R., & Halliwell, E. (2015). Social

comparisons on social media: The impact of Facebook on young women's body image concerns and mood. *Body Image*, *13*, 38-45.

Foregger, S., (2009, November 11). *The uses and gratifications of Facebook.com*. Paper presented at the annual meeting of the NCA 95th Annual Convention, Chicago, IL.

Forest, A. L., & Wood, J. W. (2012). When social networking is not working: Individuals with low self-esteem recognize but do not reap the benefits of self-disclosure on Facebook. *Psychological Science*, *23*(3), 295-302.

Fox, J., & Moreland, J. J. (2015). The dark side of social networking sites: An exploration of the relatioinal and psychological stressors assocaited with Facebook use and affordances. *Computers in Human Behavior, 45*(45), 168-176.

Gerson, J., Plagnol, A. C., & Corr, P. J. (2016). Subjective well-being and social media use: Do personality traits moderate the impact of social comparison on Facebook?. *Computers in Human Behavior, 63*, 813-822.

Gibbons, F. X., & Buunk, B. P. (1999). Individual differences in social comparison: Development of a scale of social comparison orientation. *Journal of Personality and Social Psychology*, *76*, 129-142.

Goldberg, L. R. (1993). The structure of phenotypic personality traits. *American Psychologist*, *48*(1), 26-34.

Gonzales, A. L., & Hancock, J. T. (2011). Mirror, mirror on my Facebook wall: Effects of exposure to Facebook on self-esteem. *Cyberpsychology, Behavior, and Social Networking, 14*(1-2), 79-83.

Greitemeyer, T. (2016). Facebook and people's state self-esteem: The impact of the number of other user's Facebook friends. *Computers in Human Behavior*, *59*, 182-186.

Jang, K., Park, N., & Song, H. (2016). Social comparison on Facebook: Its antecedents and psychological outcomes. *Computers in Human Behavior, 62*, 147-154.

Johnson, B.K., & Knobloch-Westerwich, S. (2016). When misery avoids company: Selective social comparisons to photographic online profiles. *Human Communication Research*, *43*(1), 54-75.

Kim, S. J., & Hancock, J. T. (2015). Optimistic bias and Facebook use: Self-other discrepancies about potential risks and benefits of Facebook use. *Cyberpsychology, Behavior, and Social Networking, 18*(4), 214-220.

Lee, S. Y. (2014). How do people compare themselves with others on social network sites?: The case of Facebook. *Computers in Human Behavior, 32*, 253-260.

Liu, C., & Yu, C. (2013). Can Facebook use induce well-being?. *Cyberpsychology, Behavior, and Social Networking, 16*(9), 674-678.

Liu, D., & Campbell, K. (2017). The Big Five personality traits, Big Two metatraits and social media: A meta-analysis. *Journal of Research in Personali*ty, *70*, 229-240.

Liu, J., Li, C., Carcioppolo, N., & North, M. (2016). Do our Facebook friends make us feel worse? A study of social comparison and emotion. *Human Communication Research, 42*, 619-640.

Marshall, T. C., Lefringhausen, K., Ferenczi, N. (2015). The Big Five, self-esteem, and narcissism as predictors of the topics people write about in Facebook status updates. *Personality and Individual Differences*, *85*, 35-40.

Mouakket, S. (2018). The role of personality traits in motivating users' continuance intention towards Facebook: Gender differences. *Journal of High Technology Management Research*, *29*, 124-140.

Naqshbandi, M. M., Ainin, S., Jaafar, N. I., & Shuib, N. L. M. (2017). To Facebook or to Face Book? An investigation of how academic performance of different personalities is affected through the intervention of Facebook usage. *Computers in Human Behavior*, *75*, 167-176.

Ong, E. Y., Ang, R. P., Ho, J. C., Lim, J. C., Goh, D. H.-L., Lee, C. S., & Chua, A. Y.-K. (2011). Narcissism, extraversion and adolescents' self-presentation on Facebook. *Personality and Individual Differences, 50*(2), 180-185.

Panger, G. (2014). Social comparison in social media. *Proceedings of the extended abstracts of the 32nd annual ACM conference on human factors in computing systems* – CHI EA 14, 2095-2100.

Park, G., Schwartz, H. A., Eichstaedt, J. C., Kern, M. L., Kosinski, M., Stillwell, D., . . . Seligman, M. E. (2015). Automatic personality assessment through social media language. *Journal of Personality and Social Psychology, 108*(6), 934-952.

Park, S. Y., & Baek, Y. M. (2018). Two faces of social comparison on Facebook: The interplay between social comparison orientation, emotins, and psychological well-being. *Computers in Human Behavior, 79*, 83-93.

Ryan, T., & Xenos, S. (2011). Who uses Facebook? An investigation into the relationship between the Big Five, shyness, narcissism, loneliness, and Facebook usage. *Computers in Human Behavior*, *27*, 1658-1664.

Shaw, A. M., Timpano, K. R., Tran, T. B., & Joormann, J. (2015). Correlates of Facebook usage patterns: The relationship between passive Facebook use, social anxiety symptoms, and brooding. *Computers in Human Behavior, 48*, 575-580.

Seidman, G. (2013). Self-presentation and belonging on Facebook: How personality

influences social media use and motivations. *Personality and Individual Differences*, *54*, 402-407.

Simoncic, T. E., Kuhlman, K. R., Vargas, I., Houchins, S., & Lopez-Duran, N. L. (2014). Facebook use and depressive symptomatology: Investigating the role of neuroticism and extraversion in youth. *Computers in Human Behavior, 20*, 1-5.

Skues, J. L., Williams, B., & Wise, L. (2012). The effects of personality traits, self-esteem, loneliness, and narcissism on Facebook use among university students. *Computers in Human Behavior*, *28*, 2414-2419.

South, S. C., Jarnecke, A. M., & Vize, C. E. (2018). Sex differences in the Big Five model of personality traits: A behavior genetics exploration. *Journal of Research in Personality*, *74*, 158-165.

Steers, M. N., Wickham, R. E., & Acitelli, L. K. (2014). Seeing everyone else's highlight reels: How Facebook usage is linked to depressive symptoms. *Journal of Social and Clinical Psychology, 33*(8), 701-731.

Steinfield, C., Ellison, N. B., & Lampe, C. (2008). Social capital, self-esteem, and use of online social network sites: A longitudinal analysis. *Journal of Applied Developmental Psychology*, *29*, 434-445.

Tandera, T., Hendro, Suhartono, D., Wongso, R., & Prasetio, Y. L. (2017). Personality Prediction System from Facebook Users. *Procedia Computer Science, 116*, 604-611

Tazghini, S., & Siedlecki, K. L. (2013). A mixed method approach to examining Facebook use and its relationship to self-esteem. *Computers in Human Behavior*, *29,* 827-832.

Toma, C. L. (2013). Feeling better but doing worse: Effects of Facebook self-presentation on implicit self-esteem and cognitive task performance. *Media Psychology, 16*(2), 199-220.

Tsai, T.-H., Chang, H.-T., Chang, Y.-C., & Chang, Y.-S. (2017). Personality disclosure on social network sites. *Computers in Human Behavior, 76*, 469-482

Uhlir, Janet L., "Social comparison and self-presentation on social media as predictors of depressive symptoms" (2016). *Scripps Senior Theses*. Paper 756.

Vanman, E. J., Baker, R., & Tobin, S. J. (2018). The burden of online friends: The effects of giving up Facebook on stress and well-being. *Journal of Social Psychology, 158*(4), 496-507.

Verduyn, P., Lee, D. S., Park, J., Shablack, H., Orvell, A., Bayer, J. B., . . . Kross, E. (2015). Passive Facebook usage undermines affective well-being: Experimental and longitudinal evidence. *Journal of Experimental Psychology: General, 144*(2), 480-488.

Verduyn, P., Ybarra, O., Résibois, M., Jonides, J., & Kross, E. (2017). Do social network sites enhance or undermine subjective well-being? A critical review. *Social Issues and Policy Review, 11*(1), 274-302.

Vogel, E. A., Rose, J. P., Okdie, B. M., Eckles, K., & Franz, B. (2015). Who compares and despairs? The effect of social comparison orientation on social media use and its outcomes. *Personality and Individual Differences, 86*, 249–56.

Vogel, E. A., Rose, J. P., Roberts, L.R., & Eckles, K. (2014). Social media, social comparison, and self-esteem. *Psychology of Popular Media Culture*, *3*(4), 206-222.

Vries, D. A., & Kühne, R. (2015). Facebook and self-perception: Individual

susceptibility to negative social comparison on Facebook. *Personality and Individual Differences*, *86*, 217-221.

Walther, Joseph. B. (2007). Selective self-presentation in computer-mediated communication: Hypersonal dimensions of technology, language, and cognition. *Computers in Human Behavior, 23*(5), 2538-2557.

Zhang, Y., Tang, L. S., & Leung, L. (2011). Gratifications, collective self-esteem, online emotional openness, and traitlike communication apprehension as predictors of Facebook uses. *Cyberpsychology, Behavior, and Social Networking, 14*(12), 733-739.

Appendix A: Social Comparison Orientation Scale (INCOM)

1. I often compare myself with other with respect to what I have accomplished in life.

2. If I want to learn more about something, I try to find out what others think about it.

3. I always pay a lot of attention to how I do things compared with how others do things.

4. I often compare how my loved ones (boy or girlfriend, family members, etc.) are doing with how others are doing.

5. I always like to know what others in a similar situation would do.

6. I'm not the type of person who compares often with others.*

7. If I want to find how well I have done something, I compare what I have done with how others have done.

8. I often try to find out what others think who face similar problems as I face.

9. I often like to talk with others about mutual opinions and experiences.

10. I would never consider my situation in life relative to that of other people.*

11. I often compare how I am doing socially (e.g., social skills, popularity) with other people.

Appendix B: Rosenberg Self-Esteem Scale

1. I feel that I'm a person of worth, at least on an equal plane with others

2. I feel that I have number of good qualities.

3. All in all, I am inclined to feel that I am a failure.*

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

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

6. I have a positive attitude toward myself.

7. On the whole, I am satisfied with myself.

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

9. I feel useless at times.*

10. At times I think I am no good at all.*

*Reverse-coded

Appendix C: Facebook Use Scales

Proactive Facebook Use:

1. I'm likely to post pictures on Facebook on a weekly basis.

2. I like to post status updates about my day.

3. I tend to look at my own Facebook profile on a daily basis.

4. I mostly use my Facebook to keep my Facebook friends up to date on my life.

5. I make sure to take pictures of my day so that I can post them on Facebook later.

6. I don't pay much attention to what my Facebook friends post.

Reactive Facebook Use:

1. While on Facebook, I often "react" to my Facebook friends' photos.

2. I'm not likely to change my profile picture on a weekly basis.

3. I'm likely to post comments on my Facebook friends' status updates on a weekly

   basis.

4. I'm not likely to use Facebook to check into locations on a weekly basis.

5. When I use Facebook, I use my news feed to "react" to my Facebook friends' check-in-posts.

6. I'm more likely to use Facebook to "react" to my Facebook friends' photos than to post my own.

7. Most of my time on Facebook is spent pressing "react" buttons.

8. I'd rather use my Facebook to comment on Facebook friends' posts than create my own.

Appendix D: Modified for Study Two Facebook Use Scales

Proactive Facebook Use:

1. I'm likely to post pictures on Facebook on a weekly basis.

2. I like to post status updates about my day.

3. I tend to look at my own Facebook profile on a daily basis to think of new things to post to it.

4. I mostly use my Facebook to keep my Facebook friends up to date on my life.

5. I make sure to take pictures of my day so that I can post them on Facebook later.

6. I don't pay much attention to what my Facebook friends post.

Reactive Facebook Use:

7. While on Facebook, I often "react" to my Facebook friends' photos.

8. I'm not likely to change my profile picture on a weekly basis but often comment on my friends' new profile picture.

9. I'm likely to post comments on my Facebook friends' status updates on a weekly basis.

10. I'm not likely to use Facebook to check into locations on a weekly basis.

11. When I use Facebook, I use my news feed to "react" to my Facebook friends' check-in-posts.

12. I'm more likely to use Facebook to "react" to my Facebook friends' photos than to post my own.

13. Most of my time on Facebook is spent pressing "react" buttons.

14. I'd rather use my Facebook to comment on Facebook friends' posts than create my own.

Appendix E: Big Five Inventory Scale

1. I am talkative.

2. I tend to find fault with others.

3. I do a thorough job.

4. I am depressed, blue.

5. I am original, come up with new ideas.

6. I am reserved.*

7. I am helpful and unselfish with others.

8. I can be somewhat careless.*

9. I am relaxed, handle stress well. *

10. I am curious about many different things.

11. I am full of energy

12. I start quarrels with others.*

13. I am a reliable worker.

14. I can be tense.

15. I am ingenious, a deep thinker.

16. I generate a lot of enthusiasm.

17. I have a forgiving nature.

18. I tend to be disorganized.*

19. I worry a lot.

20. I have an active imagination.

21. I tend to be quiet.*

22. I am generally trusting.

23. I tend to be lazy.*

24. I am emotionally stable, not easily upset.*

25. I am inventive.

26. I have an assertive personality.

27. I can be cold and aloof.*

28. I persevere until the task is finished.

29. I can be moody.

30. I value artistic, aesthetic experiences.

31. I am sometimes shy, inhibited.*

32. I am considerate and kind to almost everyone.

33. I do things efficiently.

34. I remain calm in tense situations.

35. I prefer work that is routine.*

36. I am outgoing, sociable.

37. I am sometimes rude to others.*

38. I make plan and follow through with them.

39. I get nervous easily.

40. I like to reflect, play with ideas.

41. I have few artistic interests.*

42. I like to cooperate with others.

43. I am easily distracted.*

44. I am sophisticated in art, music, or literature.

    *Reverse-coded

Appendix F: Facebook Friend Scale

How many Facebook friends do you have?

1. 0-50

2. 51-100

3. 101-200

4. 201-300

5. 301-400

6. 401-500

7. 501-600

8. 601-700

9. 701-800

10. 801-900

11. 901-1,000

12. Over 1,000

Table One: Study One Descriptive Statistics

Table 1. Descriptive Statistics				
	Minimum	Maximum	Mean	Std. Deviation
Proactive Use	1.00	6.20	2.69	1.19
Reactive Use	1.00	7.00	4.59	1.21
Number of Friends	.00	5000.00	754.10	802.24
Social Comparison Orientation	1.45	7.00	4.82	.99
Self-Esteem Level	2.20	7.00	5.26	1.16
Age	18.00	60.00	26.52	8.73

Table Two: Study One Correlation Matrix

Table 2. Correlation matrix for study variables					
	Proactive Use	**Reactive Use**	**Number of Friends**	**Social Comparison Orientation**	**Self-Esteem Level**
Proactive Use	1.00	.362**	.281**	.097	.057
Reactive Use	.362**	1.00	.232**	.268**	-.135
Number of Friends	.281**	.232**	1.00	-.012	.130
Social Comparison Orientation	.097	.268**	-.012	1.00	-.351**
Self-Esteem Level	.057	-.135	.130	-.351	1.00

Notes: **. Correlation is significant at the 0.01 level (2-tailed).

Table Three: Study Two Descriptive Statistics

Table 3. Descriptive Statistics

	Minimum	Maximum	Mean	Std. Deviation
Proactive Use	1.00	6.00	2.31	1.18
Reactive Use	1.00	6.25	4.04	1.28
Number of Friends	1.00	12.00	6.68	3.67
Social Comparison Orientation	1.45	7.00	4.76	1.00
Openness	2.50	6.70	4.90	.86
Conscientiousness	2.44	7.00	4.95	.84
Extraversion	1.13	7.00	4.37	1.23
Agreeableness	3.11	7.00	5.27	.80
Neuroticism	1.38	7.00	4.13	1.19

Note: Number of Facebook friends are categorized as the following; $1 = 0$-50, $2 = 51$-100, $3 = 101$-200, $4 = 201$-300, $5 = 301$-400, $6 = 401$-500, $7 = 501$-600, $8 = 601$-700, $9 = 701$-800, $10 = 801$-900, $11 = 901$-1,000, $12 =$ Over 1,000.

Table Four: Regression Results for interaction between social comparison orientation and neuroticism on reactive Facebook use

Table 4. Regression Results		
Predictors	**B(SE)**	**Sig**
Constant	7.1 (1.85)	.0002
Social Comparison Orientation	-1.01 (.38)	.0098
Neuroticism	-1.3(.41)	.0020
Interaction	.29(.09)	.0011
Number of Friends	.07(.03)	.0165
Age	.06(.09)	.4730
Gender	.31(.17)	.0740

$R^2 = .20$, p < .001

Table Five: Regression Results for interaction between number of Friends and extraversion on reactive Facebook use

Table 5. Regression Results

Predictors	B(SE)	Sig
Constant	-.39(1.25)	.7562
Number of Friends	.41(.124)	.0013
Extraversion	.75(.27)	.0054
Interaction	-.08(.03)	.0069
Age	.04(.08)	.6160
Gender	.35(.17)	.0456
Race	-.10(.08)	.2123

$R^2 = .20$, $p < .001$

Figure One: The effect of interaction between social comparison orientation and neuroticism on reactive Facebook use
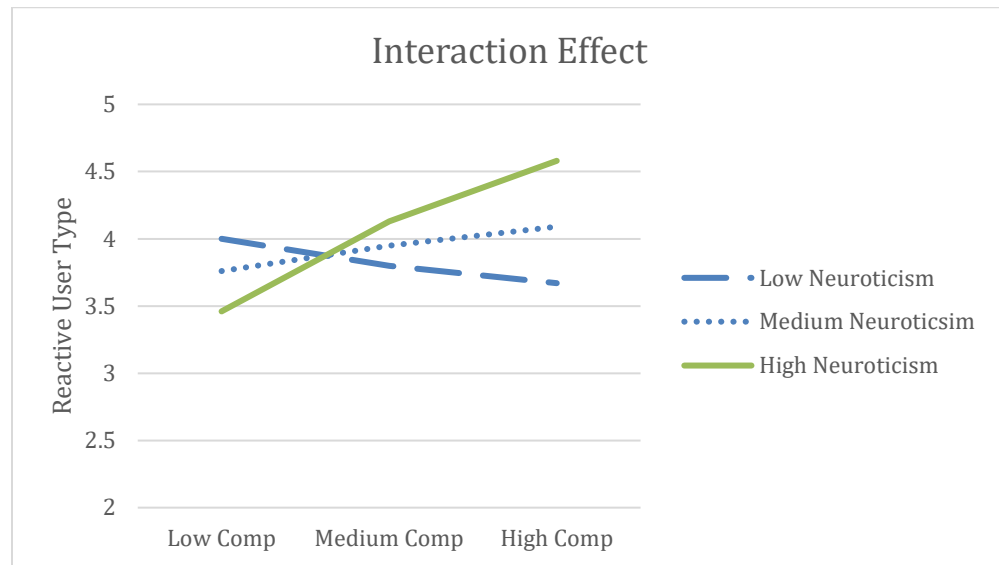
Figure Two: The interaction effect of number of Friends and extraversion on reactive Facebook use