FACEBOOK'S EFFECTS ON SUBTLE EMOTION DECODING,
ACADEMIC PERFORMANCE, AND IDENTITY PROTECTION

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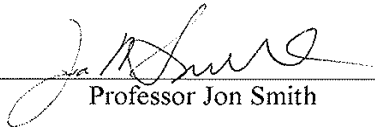
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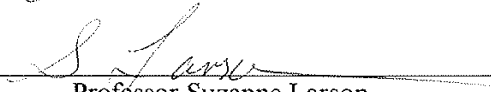
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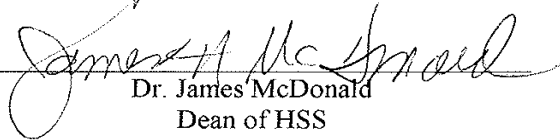
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ABSTRACT

Discrepancies exist surrounding the logistics of social networking sites, Internet abuse, privacy, nonverbal skills, academic performance, and more for many communication researchers. The present study seeks to understand nonverbal communication, privacy, and academic performance in regards to social networking sites like Facebook. The method used for this study contains multiple assessment variables: questionnaire, face-to-face self-reporting, and written self-reporting. Subjects used in this study reside at a small, southwestern community college and are enrolled in communication, social science, or biology courses. The results quantified from this research sheds light on the ongoing social network dilemma and its effects on subtle nonverbal decoding and academic performance.

Human communication in its most rudimentary form has existed since the origins of humans. However, within the past three decades the foundations of how people communicate most definitely has changed. One reason for this change is the advancements in communication technology, such as: Internet use, email, texting, instant messaging, and social networking sites, to name a few. People are looking for the instantaneous, television savvy connection that a computer identity can afford.

In the past, researchers wondered if the Internet would modify traditional face-to-face (FTF) communication (Flaherty, Pearce, & Rubin, 1998; Barber, Mattson, & Peterson, 1997; London, 1993). Researchers today are still debating whether that modification has come to pass (McLeod & Ho, 2008) and what the effects of that replacement will be. Most current communication scholars agree that people from all background, and skill level, utilize the Internet as one of the most basic forms of communication. This dependency requires additional consideration for the effects that its use might create.

Communication scholars looking into the interpersonal consequences of computer-mediated communication (CMC) have reached differing conclusions over the years. Early research suggested that CMC only supplemented face-to-face (FTF) communication since most individuals who used the Internet to communicate most often arranged an interpersonal, in-person meeting shortly thereafter (Ellison, Steinfield, & Lampe 2007). Findings from this line of thinking suggest that the most positive relationships will exist only incrementally online due to the impersonal, blunt, and even 'flaming' behavior that CMC elicits (Parks, 1996). Since relationship cues maintained primarily through nonverbal communication are missing from CMC, researchers judged communication through the Internet as being less rich than FTF interactions (Culan & Markus, 1987) and something that should be used sparingly (Parks, 1996). Current research has even concluded to some that CMC's technological advancements will impact human relationships in the negative and create conflicts that could leak into the everyday FTF interactions (Williams, 2008).

Although there is plenty of past and current research holding to the negative impact of CMC on relationships, recent studies looking at the interpersonal effects of cyber talk have found that it is not as negative as perhaps once speculated (Flaherty, Pearce, & Rubin 1998; Boyd &

Ellison 2007). Research has even found it to be beneficial.   For example, consider public

debate. Several studies show that CMC levels the social playing field, making patrons engaged

in discussions feel freer to voice their true feelings on controversial matters (Connolly, Jessup, &

Valacich, 1990; Jessup, Connolly, & Tansik, 1990; Siegel, Dubrovsky, Kiesler, & McGuire,

1986; Ho & McLeod, 2008). Ho and McLeod's most recent 2008 study reinforced the idea even

further by claiming that CMC has "the potential to create an environment conducive for public

deliberation by attenuating the effects of the undesirable social-psychological influences on

opinion expression" (p. 191). Researchers continued to speculate that CMC's support for

anonymity will allow people to generate their true feelings on emotionally charged topics and

increase necessary participation in the expression of opinions (Ho & McLeod, 2008).

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Chapter One

Introduction

To compliment the idea that CMC is good for free expression of ideas, FTF interactions have been found to contribute to communication apprehension and spirals of silence (Ho & McLeod, 2008). Ho and McLeod's study suggest "in the physical presence of others in an FTF context, individuals may fear that their views are perceived by others as deviant and so they are more reluctant to voice their actual opinions" (p. 194). Having debate via CMC could eliminate the spiral of silence tendency that a FTF realm creates.

Free expression cannot be underestimated since it operates on the foundations of our country's democracy and freedom of speech. This benefit reaches everyone from the smallest town hall to the president's oval office. The idea that CMC could minimize negative impacts and actually improve communication richness in public forum (Lowry, et.al, 2006; Barber, Mattson, & Peterson, 1997) is a cause worth mentioning.

A separate point to consider in the CMC realm is social network sites (SNS), which have also impacted the way people communicate vital information about themselves. Research conducted by O'Sullivan, Hunt, and Lippert (2004) has shown that CMC "has the potential to be used in ways that are important for relationship initiation, development, and maintenance" (p. 464). In the past decade, SNS such as MySpace, Facebook, Classmates.com and LiveJournal have created a reality that has changed the way social networks are maintained and created (boyd & Ellison, 2007).

Facebook in particular has received tremendous attention in research articles from communication scholars looking at the effects of CMC on interpersonal relationships (boyd, 2006; Corbett, 2009; Ellison, Steinfeld, & Lampe, 2006; Ellison, Steinfield, & Lampe, 2007;

Hamilton, 2009). Millions of Internet savvy patrons log on to communicate with their spouse, children, friends, co-workers, business associates, and even strangers in a virtual reality that is void of typical nonverbal responses which allow for message modification. Yet, regardless the difficulty associated with nonverbal barriers, people continue to choose the world-wide-web for everything from accomplishing their most basic needs to satisfying their deep, intimate desires (Kiesler, Siegel, & Mcguire, 1984).

Internet users are no longer only associating with people they would expect to interact with in real life. Rather, social networking seems to be creating friends that exist solely on the computer. This raises questions about privacy and trust on Internet sites dedicated to social use (Gross & Acquisti, 2005, Dwyer, Hilts, & Passerini, 2007). If a person never plans on meeting whom they are communicating with, will there be a tendency to stretch the truth and present oneself in a manner that is pleasing to the individual, regardless how true? Also, how patrons of sites such as Facebook feel about sharing their most private details with complete strangers (who might very well remain so) and to what degree trust and security play into their decisions for the quantity and quality of information shared is something worth questioning (Acquisti & Gross, 2006).

Most SNS allow the individuals to present themselves for various purposes: political, college oriented, romantic relationship initiation, or shared interests. Members from these sites are able to join groups based on common interests and have access to each 'friends' profile. The accuracy of this information is a cause to consider. Since anyone can post anything about himself or herself, it has been questioned whether accurate personal representation is still a current goal of communication residing on the Internet (Rosenbush, 2006).

As of the 2009 year, more careful research is being conducted on the impacts of SNS such as Facebook. For example, significant media attention on the connection between Facebook and the diminished mental abilities of its users has given some scholars notice. In particular, studies done in 2009 by Karpinski and Duberstein of Ohio State University and Oxford University neuroscientist Susan Greenfield cautioned that social networks like Facebook and Bebo were infantilizing the brain into the state of small children by shortening the attention span and providing constant instant gratification (Khun, 2009 and Wilson, 2009).

In the 2008 book, iBrain: Surviving the Technological Alteration of the Modern Mind, UCLA neuroscientist Gary Small brings up the possibility that there could be a deficit in the young mind's ability to determine real-life facial expressions and understand the emotional context of gestures practiced most often in nonverbal communication interactions (Hamilton, 2009; Small & Vorgan, (2008). The relationship between the void of FTF interactions in the younger generations and the lack of nonverbal learning that is incorporated from this type of communication begs further clarification.

The actual validity of the Karpinski study and the Greenfield study is currently being disputed. As of July 2009, only a handful of studies have been completed looking at the truth to the correlation of Facebook and other SNS and academic performance. Pasek, More, and Hargittai (2009) have produced a study that shows Facebook users were no different from nonusers in their academic performance. They attribute the findings of Karpinski and Duberstein Ohio study to media hysterics, which stem from basic misunderstandings of a new phenomenon. Also, research done by Facebook employees has found that there is no difference between the academic abilities of users vs. non-users of their SNS, and they believe findings on the contrary lack proper causation (Kephart, 2009 and Hamilton, 2009).

Along with academic performance effects, the use of SNS like Facebook could have an impact on nonverbal decoding skills as well (Ho & McLeod, 2008). In particular, it is wondered if patrons who utilize most of their social networking online are at a disadvantage when it comes to the subtle nonverbal decoding, like what is afforded in Face-to-Face interactions (Flaherty, Pearce, & Rubin, 1998, and Chenault, 1998). The development of emoticon use has seemed to bridge this gap for some (Godin, 1993) and seemed unnecessary for others (Walther & D'Addario, 2001). What is agreed upon is that understanding how verbal and nonverbal cues play out in computer-mediated realms remains highly debatable (Walther, Loh, & Granka, 2005).

The rise in social networking use from 2006 to 2009 is astounding and clearly people from all backgrounds are choosing the Internet and SNS over even the phone to manage their personal and business relationships. In fact, a February 2010 CNN money report claims social network sites have received the most gain in users from the 2009-2010 year, up a whopping 82% worldwide (Wunderlich, 2010). In fact, according to the same report, Facebook is the number two site in the world, with over 350 million users according to Facebook.com. It falls just behind Google, which is the number one site.

Even though Facebook is no longer exclusive to the college age student, it remains extremely popular on campuses worldwide as the premier place for communicating with other people for social purposes (Golder, Wilinson, & Humberman 2005). College students around the globe log in daily to keep tabs on their social network of friends, make appointments, send emails, make new friends, and keep others posted on their daily life adventures (Rosen, 2007). Golder, et.al (2005) sum it up well by stating: "Facebook is weaved into the college student experience, and its use mirrors college students' daily, weekly, and seasonal schedules…its value

lies in it's use as a way for college students to support both distant and geographically proximate relationships" (p. 13).

In summary, the impacts of SNS like Facebook are just beginning to surface in communication research and thus, contributing to this research will help aid the debate in the communication field of study. In order to properly understand the research that the current study poses, chapter two will consist of a thorough literature review on the topic. The review will begin by looking at the foundations of SNS and Facebook, next how computer mediated communication affects emotion decoding that is present in nonverbal communication, and finally trust and privacy in regards to SNS and Facebook. For simplification purposes of the research being conducted, only studies regarding Facebook as a form of SNS will be discussed and used in the study.

Chapter Two

Literature Review

This chapter deals with background information regarding Facebook, how computer mediated communication affects emotion decoding that is present in nonverbal communication, and finally trust and privacy in regards to SNS and Facebook

Facebook

Founded in 2004, Facebook is a SNS that was originally designed for the use of college age students, and operated under restriction to keep it so. Rosen (2007) explains that the name Facebook originates from "the small photo albums that colleges once gave to incoming freshmen and faculty to help them cope with meeting so many new people" (p. 17). The college age demographic restriction only lasted two years until 2006 when it's founders decided to make it open to the public, so long as a person has a valid email address and the computer skills necessary to create a profile.

There are three main unique features to most SNS sites and to Facebook in particular: profiles, friends, and public commenting features like 'the wall' and live news feed (boyd, 2007).   People join SNS in order to share information about themselves and learn more about those they consider 'friends' (Golder, et.al, 2005).

Golder, Wilkinson, and Huberman conducted large-scale study in 2005 to look at the amount of Facebook friends in that year. Their findings showed that the average mean of friends per Facebook user was 144 with a median of roughly 180. Research in 2008 reports Facebook use has more than doubled in a two-year period. In example, 16 percent of 14– to 22–year–olds in 2006 more than doubled to 40 percent among that same population in 2008 (Pasekein, More &

Hargittai, 2009). The number of users cited in most current studies varies from 42,089,200

active users (Corbett, 2009) to the total number of users to being substantially larger at over 350

million patrons who have set up accounts on Facebook (Zuckerberg, 2009).

Some of the most interesting statistics show a 276.4% increase in growth rate of 35-54

year old demographic segment, creating an overall growth rate of 58.9% for all ages and growing

(Corbett, 2009). One 2006 study of Michigan State University students showed results that 94%

of their student population were current members of Facebook (Ellison et. al., 2006). This type

of rapid growth necessitates critical analysis to fully understand the real world impact that its

increased usage is affording and provides rational for this study.

The popularity of Facebook and other SNS has seemed to be due to its heavy usage

patterns and technological capacities which bridge online and offline connections. Golder,

Wilkinson, and Huberman (2005) claim,

> Like other social networking sites, such as Friendster, Tribe.net and MySpace,
>
> Facebook enables its users to present themselves in an online profile, accumulate
>
> "friends" who can post comments on each other's pages, and view each other's
>
> profiles…they can also join virtual groups based on common interests, see what
>
> classes they have in common, and, via the profile, learn each others' hobbies,
>
> interests, musical tastes, and romantic relationship status (p. 1).

Common belief for most researchers affirms the relationships formed on Facebook will

follow an online to offline connection (Ellison, Steinfield, & Lampe, 2007). The result is that

friends formed on SNS will either already have a social, FTF connection, or will shortly move

over to that realm. Most often, users of Facebook will search for people that they have had some

sort of connection within FTF interactions, and then ask them to be their friends on Facebook

(Ellison, Lampe, & Steinfield, 2006). This was noted by the same authors as occurring much more often than browsing for someone who is completely unknown to them. In fact, the current logo appearing on Facebook's home site is: "Facebook helps you connect and share with the people in your life" (Facebook.com, 2009).

To be even more specific, Ellison, Steinfield, & Lampe (2006) have claimed that Facebook is primarily used for people to keep in touch with their high school friends and acquaintances. They point out that the most common information on the users' profile "was likely to be relevant for existing acquaintances trying to find them (e.g. their high school)" (p. 28). Ellison, Steinfield, and Lampe argued that most users perceived that their high school friends had viewed their profile and they used SNS to maintain relationships formed offline, rather than forging new online contacts.

However, by sheer number of friends a person has on Facebook, 144 as the mean in 2005 (Golder, Wilkinson, & Huberman, 2005), assuming that a person will stay (or even ever be) in FTF context with the majority of their friends is not practical. It is not uncommon for someone who has a friend on Facebook to never communicate with that person in the real FTF life and still update them daily using a live news feed on what is happening in that person's life: for example baking cookies, getting a new job, sickness, annoyances, or health concerns. The day-to-day information that was once reserved for people you interacted with in your circle of friends is now available to the estranged 'friends' of your past, present, and future.

The removal of a FTF interaction with a friendship opens the door to privacy and truth in the online realm. In particular, it has been noted by some that people operating online are less honest than they are in FTF interactions (Taylor, 1999).

Ross, Rosser,Coleman, and Mazin, (2006) say it well:

Anecdotal evidence suggests that the Internet is a site where

misrepresentation of self, whether physical characteristics, age, or even

gender, is not uncommon where seeking partners and interacting sexually is

concerned (p. 133).

The idea of learning how to trust information that is presented online and

knowing how to keep your data private and accurate are worthy endeavors.

Privacy on Facebook

Facebook offers some fairly simple privacy settings, application settings, and account

settings which can be operated to ensure more individual security online. The privacy control

allows you to designate who can see information about you, who can search for you, and what

news feed or wall inserts will be shown on your Facebook page (Facebook.com, 2009).

However, Acquisti and Gross (2006) made mention that the barriers created to bar entrance to

any Facebook site are low and "various forms of social engineering or technical attacks are

possible…[letting] information be visible to members who were not supposed to see it [may not

be the best idea]" (p. 2). In other words, there are protection measures available, but you have to

seek them out. Most Facebook users opt to rely on only the standard privacy features that go

along with any account setup, which might not be the best as far as personal protection is

concerned.

This same concern has been brought up in the media, with a most recent embarrassment

linking Facebook to a Brittan secret service agent information leak. (Soghoian, 2008). Although

Facebook staff claim they have repaired most of the privacy concerns, the actual differences are

hard to see (Acquisiti & Gross, 2006).

Privacy on Facebook has been a concern for several researchers since it's SNS origins. boyd (2007) claims "new social technologies have altered the underlying architecture of social interaction and information distribution…often with the clumsy candor of an elephant in a china shop" (p. 1). He continues that because the architecture of social interaction and information distribution has shifted, many people, teenagers especially, are being left blind to the ability to judge how public or private a particular place is, leaving them vulnerable to the real world personal attacks (stalking) or cyberspace personal attacks (identity theft).

Other research suggests, unsafe disclosure of information, cyber-bullying, addiction, risky behavior and contacting dangerous communities are but a few of the concerns raised in the media about the use of online social networks (Valenzuela, Park, & Kee, 2008). The result of this 'lack of understanding' ranges in results from fairly severe to almost non-existent which could explain some of the nonchalant behavior exhibited in its respect.

Privacy online is a topic that requires additional information on trust in order to really understand. A thorough explanation of trust in FTF interactions and SNS will be provided next in order to further this understanding.

Trust in Computer Mediated Communication

A much cited definition of trust falls to Mayer, Davis, & Schoorman (1995) who define trust as "willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform [or not perform] a particular action important to the trustor, irrespective of the ability to monitor or control that other party" (p. 712). Shim et.al (2005) continues this definition with the claim that trust in the information-sharing era is critical

for the success of e-commerce in general, and in order to have trust in that realm, risk will be a

necessity.

Dwyer et.al (2007) continues this definition of trust to also include social exchange

theory with the idea that an individual will enter into an exchange relationship if trust is used in

the calculation of the cost; or as the authors put it: "high trust would lead to a perception of low

cost, and vice-versa" (p. 2). People choosing to share their personal information must feel secure

enough with their source to give that information. Likewise, the business recipient needs to trust

the individual not to give them bogus information.

Dwyer et.al (2007) looks at trust specifically by examining privacy concerns and online

behavior. Research has shown that although users say they are concerned with privacy and trust,

they do not initiate the safeguard tools provided to protect their privacy (Gross & Acquisti,

2005). Acquisti and Gross (2006) summed up their feelings about information sharing by

stating: "one cannot help but marvel at the amount, detail, and nature of the personal information

some users provide, and ponder how informed this information sharing can be" (p. 2).

Seemingly, trust abounds in the online world and concern for personal identity privacy is scarce.

The lack of apparent awareness regarding privacy on SNS is surprising, especially with

the media attention given to the risks of sharing personal information online (Soghoian, 2008;

McCarthy, 2009). Soghoian (2008) cited a University of Virginia report stating people don't

understand what exactly is happening to their data behind the scene, or how much personal

information is actually accessible through SNSs like Facebook. It seems that until identity theft

or cyber-stalking occurs in a person's real life, people are oblivious to the risks they engage in

while operating their social networks online.

Something unique to Facebook is its apparent ability to make its users trust in their privacy controls, at least initially. In fact, Dwyer, et.al (2007) found that compared to other SNS, and MySpace in particular, "Facebook members were more trusting of the site and its members, and more willing to include identifying information in their profile" (p. 9). The cause of this immediate trust and the specific aspects of their profile they regard as private and worthy of exhibiting trust for remains mostly unknown. Also unknown are the effects that this sort of causal trusting could have on a person's future personal information.

Something that is even more unclear, however, is academic performance and the effects that SNS are having on today's high school and college student grades. Information about this is extremely recent, and therefore peer-reviewed literature on its behalf is fairly low although media reports are plenty. Using a combination of both, a brief section is offered next.

Academic Performance

Internet abuse is not a new concept when looking at the effects of CMC. Studies looking at the effects of over use or self-reported abuse show a population who feel out of control, helpless, with symptoms similar to people suffering from substance abuse or as gambling addicts (Morahan-Martin, 2005).   This is because the Internet is a unique medium that allows different behaviors, be they normal, pathological, or disturbing that might otherwise never be exhibited in normal society. Specifically, the "over-use and dependency of the Internet has been reported to result in impairments that include work and school-related problems and dismissals, interpersonal problems, separations and divorces, and even impaired health" (p. 40). Most of these types of disorders could be considered impulse control behavior problems, where the

person is unable to control their urge to go on-line to satisfy whatever it is they are Internet addicted to.

Poor academic performance of Facebook users has just recently become chimed as a possible Internet disorder. Carr (2008) wrote a cover story for the Atlantic magazine, questioning if the Internet and Google in particular are making us stupid. The claim is that although the Internet improves multitasking skills, it decreases our ability to concentrate on things like a research article, and leaves us ingesting less educational, more entertaining material. Rather than read a book on a topic, we Google it, getting less depth in the information we receive and rather just the surface skimming effect.

This is a thanks in part to the media attention given to Aryn Karpinski and her co-author Adam Duberstein of Ohio Dominican University. Their study, which was presented at the annual meeting of the American Education Research Association on April 16, 2009, found the college students who log on daily to Facebook have significantly lower grade-point averages (GPAs) than those who do not (Hamilton, 2009). The actual study remains unpublished, however, although documents do exist saying the conference report took place.

In a respected Time.com article, it was reported that the Karpinski study surveyed 219 undergraduate and graduate students and found that GPAs of Facebook users typically ranged a full grade point lower than those of nonusers — 3.0 to 3.5 for users versus 3.5 to 4.0 (Hamilton, 2009). That Facebook could have such a negative effect on a student's academic experience is astounding, and something worth consideration. The Karpinski study also found that 65 percent of Facebook users access their account daily, often checking it several times for new messages. Some people spend just a few minutes on the site, others spend more than an hour (MyFox, 2009).

Hamilton (2009) also cites a study done by Oxford University neuroscientist Susan Greenfield who "cautioned Britain's House of Lords that social networks like Facebook and Bebo were 'infantilizing the brain into the state of small children' by shortening the attention span and providing constant instant gratification" (p. 1). To supplement this idea, UCLA neuroscientist Gary Small warns of a decreased ability among devotees of social networks and other modern technology to read real-life facial expressions and understand the emotional context of subtle non-verbal gestures (Small & Vorgan, 2008).

Other research performed on academic performance and Facebook before the Karpinski study has reached differing conclusions. A study done by Ellison, Steinfield & Lampe (2006) concluded, "The high penetration and lack of any systematic difference between members and non- members suggests that Facebook is having broad appeal, is not excluding particular social groups, and has not had a noticeable effect on students' grades (note: there is no correlation between GPA and intensity of Facebook use)" (p. 27). However, how the authors determined this remains unstated.

Most recently, the media hype associated with the Karpinski findings caused three researchers to quickly submit a duplicate study, ending with a claim that refutes the prior Ohio State University research (Pasek, More & Hargittai, 2009). In this study, partially supported through Stanford University, the authors claimed the information presented by Karpinski was mostly media hype and not adequately studied or reviewed. "Unsophisticated outcomes" is a term they use when describing the study (p. 7)

The findings in the Pasek, More & Hargittai (2009) study specifically found that "there is no negative relationship between Facebook use and academic performance…users were no more or less likely to get good grades than non-users…[and in fact, we] found evidence that Facebook

use was slightly more common among individuals with higher grades" (p. 7). This is a clear contradiction to the initial Ohio State University finding, and begs further testing to validate one or the other's results.

A separate article bolsters this claim by pointing that the Internet actually makes us smarter and the multitasking increase is nothing to scoff at (Anderson & Rainie 2010). Research aligning with this train of thought points out that the link of Academic performance and Internet use is weak and situational.

Nonverbal Communication and CMC

Nonverbal Communication is defined by Adler & Proctor (2007) as "messages expressed by nonlinguistic means…including messages transmitted by vocal means that don't involve language [like] sighs, hugs, and other assorted noises…volume, rate, pitch…physical appearance, environment, distance, time, body language, gestures, facial expression and others" (p. 197). When considering the impact of nonverbal communication in face-to-face interactions, some would argue that understanding language in the face-to-face context is impossible without nonverbal communication considered as a factor. Bavelas & Chovil (2000) state, "language in face-to-face dialogue is composed of both audible and visible acts and although these acts can be separated analytically, they are completely interwoven in performance" (p. 164). They continue that words, hand gestures, and facial expressions could in fact have a different advantage altogether when looking at the different kinds of meanings used in messages. Words are useful when trying to describe objects, actions, events or abstract terms; hand gestures are useful for size, shape, positions, or movement; and facial expressions are useful for conveying information about people's reactions, and for "rapid syntactic movements such as eyebrow markers" (p. 188).

It has been documented for over two decades that the lack of nonverbal communication cues in CMC (such as smiles, head nods, posture eye contact, sarcasm, or voice to name a few) could cause problems for a receiver who is trying to decode the written message (Sarbaugh-Thompson & Feldman, 1998, Kiesler, Siegel, & McGuire, 1984). Since society relies on CMC for everything from relationship maintenance to purely task oriented goals, a way to bridge this nonverbal gap has necessitated forging solutions.

Emoticons are one of the common forms of emotional display in CMC messages that users implement as a way to satisfy some of the message decoding needs the nonverbal gap produces (Wather & D'Addario, 2001). It has been argued that until the smiley ☺, semicolon with parenthesis for a wink ;), or other emoticons were established, it was almost impossible to tell when a person was joking, using irony, or creating a pun (Godin, 1993). Godin continued to state that emoticons such as the smiley can "spice up any form of written communication…you can say 'boy isn't he intelligent ;)' and make quite clear that you think the subject is an idiot" (p. 4). There have been remarks by some that emoticons are more frequently used by women, but that men will rise to the amount of emoticon use in mixed sex groups (Wather & D'Addario, 2001). This fits with Proctor and Adlers (2007) observation of nonverbal communication in general, and their claim that women are better than men at encoding and decoding nonverbal messages.

Although most researchers equate emoticon use with nonverbal expression, some research has found the emoticon as "complementing verbal messages at best but not contradicting or enhancing them" (Wather & D'Addario, 2001 p. 342). This would suggest that users of CMC adapt their messages enough to get across the correct meaning of their communication, and do not need to rely on nonverbal communication to get the point across.

Research has also concluded that nonverbal communication is not necessary in CMC when developing social presence or immediacy (O'Sullivan, Hunt & Lippert, 2004). In fact, research conducted by Wright & Bell (2003) suggests, "the removal of nonverbal communication requirements (i.e. they need not monitor their gestures, facial expressions, voice or physical appearance) allows them to devote greater cognitive resources to the articulation of their desired message" (p. 49). In other words, when delivering a message, a person may be better able to convey their desired meaning through CMC sources.

A definition given for social presence by Lowry et.al (2006) helps when considering the impact of nonverbal communication replication needs in CMC. It states social presence is "the degree to which a communication medium allows group members to perceive (sense) the actual presence of the communication participants and the consequent appreciation of an interpersonal relationship, despite the fact that they are located in different places, that they may operate at different times, and that all communication is through digital channels" (p. 633). Perhaps social presence is what symbols such as emoticons are trying to establish when incorporated in a message.

Research continues to affirm that nonverbal communication is not necessary for fulfillment of relationship messages through CMC. Social information processing (SIP) theory suggests that individuals will adapt to the lack of nonverbal cues available with CMC and will compensate in order to convey the desired relational or personal information (Walther, Loh, & Granka, 2005).

O'Sullivan, Hunt, & Lippert (2004) refute the idea that social cues in CMC are impersonal, ineffective, and inappropriate for social relationships. Rather they affirm that people are more than capable of connecting, creating intimacy, and affiliating via CMC than previously

thought. The contradiction existing between scholars looking at the impact of lack of nonverbal communication begs further clarification.

Another area that is unclear in regards to nonverbal emotions is facial expressions. Ekman (1992) describes that interpreting facial expressions is difficult to do, especially between cultures. Although certain physiological changes seem to be linked to different facial emotions, coming up with a set species recognition of what those emotions mean is more difficult to do. There are certain universal emotions that have been identified by psychologists and anthropologists such as fear, anger, disgust, sadness, enjoyment, surprise, contempt, interest, shame and guilt, but "little is known about cross-cultural differences in display rules, as a function of sex, role, age, and social context" (p.35). For example, take the smile. Smiling in the face of unpleasant circumstances and with interpersonal deception has led anthropologists to proclaim that facial expressions have different meaning in different cultures which would suggest the universal emotions are not as universal as once thought (Ekman & Friesen, 1982). Smiling is a seemingly simple emotion, which clearly is more than it seems.

Emotional decoding is complex because of the individual differences that exist in the speed, magnitude, and duration of expression. There are also factors such as the variations in which facial expression of emotion occurs in response to a particular event. Ekman (992) states, "it is not known whether such differences are consistent across emotions or situations, or over time…we also don't know whether personality, traits, moods, and psychopathology have facial markers or are second-order inferences drawn from the occurrence of facial expressions of emotion" (p. 35). This puts placing definitive results on emotional decoding as a hard task to accomplish.

Rational and Research Questions

The contradiction existing between scholars looking at the impact of lack of nonverbal communication and increased dependency on CMC begs further clarification. Scholars and media outlets are divided on the benefits and costs associated with being an online world and neither side seems sure of what effects reliance on the other holds. It could be said that anytime something new is introduced into society, there is a sort of panic, as we saw when the television was introduced in the mid 1900's. Television viewing has been linked to negative effects, but none like what were initially reported.

The fact that research is so clearly divided between reliance to online communication forms and it's costs to our academic performance, nonverbal congruency, and identity in general begs that this issue be explored with more substantial data. However, finding people to participate in comparative studies between users and non users is difficult, since the majority of us do so much of our conversations online. This poses a unique problem when considering how to clarify what is really going on.

How nonverbal communication decoding is affected by SNS, the effects of SNS on academic performance, privacy concerns, and accurate self-disclosure all remain in question. The consequences that could result from each issue have the possibility of lasting social impact. Thus, concrete, reliable research on each matter is necessary.

The current study seeks further understanding of each issue listed above in small, specific terms. Although it is unlikely that the results of the research conducted on the matter will drastically answer any of the questions on the table, having some sort of validation on each issue for what has been currently looked at seems necessary. Therefore, the following research questions will be addressed:

RQ1a. Do Facebook patrons actively use the identity protection features available to them on Facebook?

RQ1b. Do Facebook patrons view the site as having adequate safety controls?

RQ2. Does high use of Facebook correlate with poor academic performance in the college atmosphere?

RQ3a. Are Facebook patrons less able to distinguish subtle emotion nonverbal cues than non-users in a FTF context?

RQ3b. Are Facebook patrons less able to distinguish subtle emotional nonverbal cues when reading a dialogue as compared to what they are capable of in the FTF context?

In addition to the proposed research questions, the following hypothesis will also be utilized to draw conclusions about the participants involved in the study:

H1: Participants will view themselves more charitably than others in identity gauging situations.

H2: Participants will have an idealistic perception of the safety features utilized on Facebook, making them feel safer than what they actually might be.

H3: Non-Facebook users will be better at decoding subtle non-verbal emotions than will their Facebook counterparts.

H4: Non-Facebook (low users) will have a higher GPA than medium or high Facebook users.

Chapter Three

Methods

Design

The present study was designed to look at academic performance, nonverbal decoding, and identity management for Facebook users vs. non-Facebook users. It utilized a survey in order to collect data and required no strenuous activity or involvement from any participant.

Southern Utah University's IRB board was approached for approval of this study before conducting research. Snow College, who supplied the subjects, also granted permission for the research to be conducted on their campus through the Dean's Council approval. Also, a pilot study was conducted one month prior to the actual study in order to determine if there is a difference between the interpretation of emotions in a face-to-face encounter and a video recording. It was concluded that no significant difference is present. This correlates with other studies that have determined little or no difference in FTF and movie recordings for emotional decoding (Achaibou et. al., 2008). The pilot study also resulted in a simplified version of the survey including an evaluation scale that was more easily compared and analyzed.

Participants

Subjects for the study were selected from nine classes: three from a beginning public speaking course (Communication 1020), three from a social science course (Economics 1010), and three classes from a biology course (Geology 1010) at a small, south-western community college. In total, 130 students were surveyed. Participation from each student was voluntary, without extra credit incentive or other rewards. The attempt to include students from Humanities, Social Science, and Biology was orchestrated in order to resolve critics concerns regarding

sampling only humanities students, who have unique dispositions of academic performance in

regards to behavior related themes (Pasek, More, & Hargittai, 2009).

Procedure

The students were approached by the researcher at the beginning of their regularly

scheduled class and given a survey and a rating scale for their particular type of message content:

auditory, face-to-face, written, or written with emoticons. All participants were able to ask

questions at any time and were given a disclosure form attached to the top of their survey, which

clarified that this is a voluntary, anonymous study, which they could stop at any time. The

particular recruitment script is supplied in (Appendix F).

Students were administered a research questionnaire which included two parts (see

Appendix A and B). The first part included a written questionnaire with questions referring to

current student status, academic performance, and self-perception of Facebook (Appendix A).

Sample questions from this survey include, "What is your current GPA", "On average, how

many hours a day do you spend on Facebook?", and "On a scale of 1-5 with 5 being very

trusting, how do you trust in the Facebook site to provide identity protection for you?" Subjects

were allowed to skip any question they did not wish to answer.

The second part of the study consisted of one of three options for the three corresponding

group participants: Group A, Group B, or Group C (see Appendix B). The three options were

divided in regards to the delivery of a scripted dialogue between two individuals, presumably in

a relationship.   The only instructions for the interpretation of the dialogue for the research

subjects were included on the administered survey.

The questions on the questionnaire refer to the emotional context of the message that is meant to simulate a real life fight between a controlling, distrusting spouse and his emotionally depleted counterpart. Two actors, consisting of the researcher and her real-life spouse, gave the performance. Their relationship was utilized in order to portray as realistic of an emotional encounter between husband and wife as possible.

The script was rehearsed a minimum of 10 times prior to video recording. After the performance was videotaped, both participants immediately recorded how they judged the emotions that they were portraying on the same scale that was provided to the research subjects. The scoring outcomes from the actors was used as the correct emotional response, in order to determine how far off the decoding by subjects ended up being. The results of the actor's self-reported emotions are reported in (Appendix E.)

The participants in Group A were asked to consider their personal interpretation of the above mentioned scripted FTF encounter viewed on a projected movie recording. For this group, the research subjects watched a recording of a FTF disagreement acted out between a male and **a** female. Subjects were instructed on the form to respond to each question on an instinctual basis.

Other separate classes were asked to participate in Group B portion of the study. The dialogue presented to these subjects consisted of an audio recording of the same performance the subjects participating in Group A viewed. Subjects were instructed on their form to respond to each question on an instinctual basis. The questions referred to the emotional context of the message performed by each actor. The questions were the same as what was given to subjects in Group A.

Group C also included three separate classes. The dialogue presented to these subjects was the written form of the performance Group A and B witnessed. It was presented in two

unique scripts; one with emoticon enhancement, and one without (see Appendix C). In other words, Script one included the dialogue performed in a written context without any added punctuation or emoticon use. Script two included some minor punctuation additions, (i.e.""") and two different emoticons, (☺ and ☹). The classes who were involved in Group C were equally divided into two groups and given a corresponding script. The ~~only~~ instructions were provided on the form.

The actors who performed the script for Group A and B were given a script which is identical to the script given to the research subjects, but with the addition of a written description of the emotion that should be portrayed (See Appendix D). They also received FTF coaching from the author on the degree of emotional display that should be portrayed, including an interpretation and demonstration of the script.

Data Collection

Data was collected by attending each of the nine sections during the first ten minutes of their regularly scheduled class time, and administering a survey to all participants in attendance. Verbal instructions were given to each participant, informing them of the recruitment script and letting them know that they will receive no psychological harm through their participation. Participants were also made aware of the basic design of the study and instructed to wait to fill out the nonverbal decoding section until after viewing their groups performance either by watching the dialogue or just listening to it play out. For group C, the participants were instructed to read through the attached script only once, get a sense of what is presented, and then to instinctually record their analysis of what emotions were being expressed through the

dialogue. All participants were informed that they could stop at any time and could also ask questions of the researcher during the study.

Data Analysis

Data was collected and then recorded according to the participant's group by entering in the information in Excel spreadsheets. All questions were individually scored, and sums or averages were compiled for each individual group and then as a collective audience. Comparisons were drawn between the different groups based on each section of questions and depending on the aim of the analysis.

Once collected and recorded, the data was analyzed using charts and graphs or utilizing simple statistical tools such as PASW correlations test and paired sample test. Visual conclusions were drawn from these measures, and the results were then analyzed for conclusions that could be drawn.

Chapter Four

Analysis and Results

Design

The results obtained from the three different group's responses to the survey and

emotion-decoding questionnaire were compiled and analyzed using Microsoft Excel and PASW

statistical software. The data was then analyzed with regards to the research questions and

hypothesis in mind, in order to determine results that would answer the proposed questions.

Results

Demographics

The survey results that required no analysis and just included subject data for

demographic purposes yielded the following results: The total number of participants was 130

and the average age of participants was 21. The number of male subjects was 64 and number of

females 59 with seven not reporting. The number of sophomores was 87 (67% of participants)

and number of freshman was 38 (29% of participants). The high number of sophomores is

significant since it means the majority of participants GPA include at least two semesters of

classes. The number of subjects with a Facebook account was 118. The number of subjects

without a Facebook account was 11 with 1 person not reporting. For participants with a

Facebook account, the average amount of time that they spend on this SNS is 1.06 hours per day

and the average amount of total time that they have had their Facebook account is one year and

seven months.

The survey also included four comparison questions addressed to Facebook users, which

allowed for simple analysis: 85% of Facebook users preferred to send messaged to their friends

on Facebook; 9% of Facebook users preferred to send messages to their friends using Email;

47% of Facebook users preferred to send messages to their family on Facebook; 42% of

Facebook users preferred to send messages to their family using Email. See graph below for a

detail comparison of these four groups.

Figure 1. Preference of Email vs. Facebook for Friends and Family
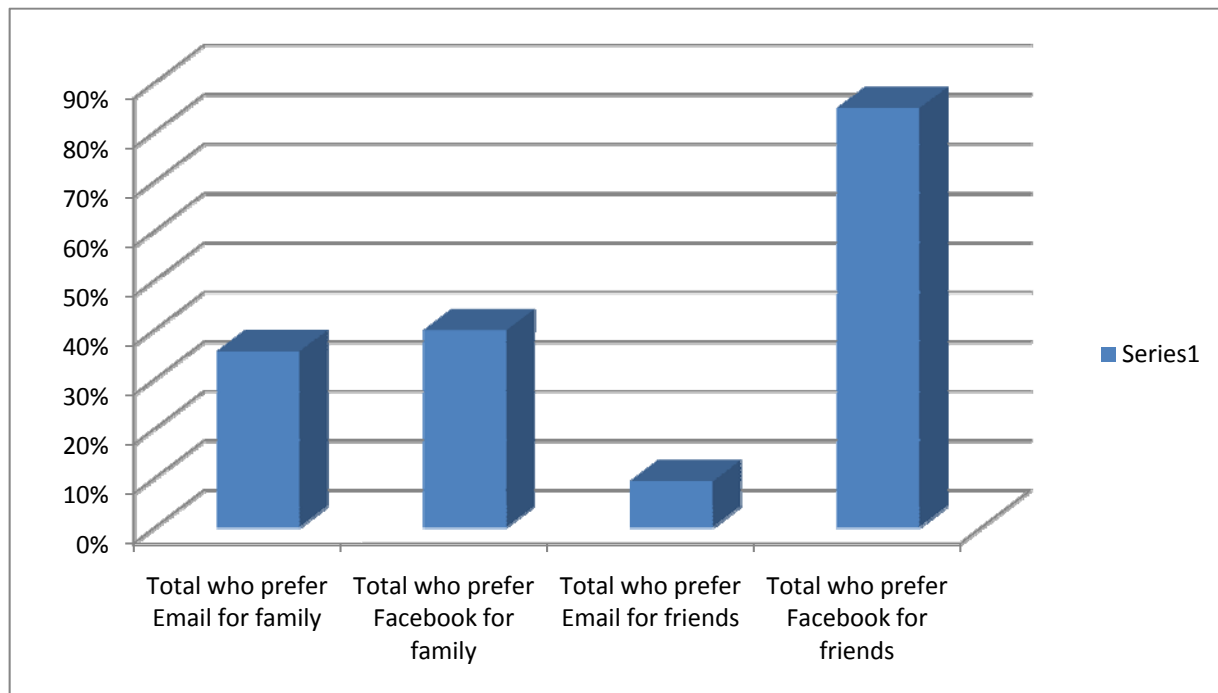
The majority of participants preferred to talk to their friends and family on Facebook

rather than Email. However, participants felt about equal about communicating with their family

on Facebook and Email. This was not the case in regards to communicating with friends on

Facebook or Email. These results indicate a difference between preferences for how to stay in

contact with friends, with the high majority choosing Facebook.

Privacy and Identity Portrayal on Facebook vs. FTF

The questionnaire results included a portion of questions regarding to perceived identity

portrayal and safety in regards to Facebook. Respondents were asked to evaluate the questions

on a scale of 1-5 with 1 being strongly disagree and 5 being strongly agree. See **(Appendix G)**

for particular results showing the average of what participants felt.

Of particular interest, participants felt that other people are less open and honest than

themselves online. Participants also felt they were more open and honest in their FTF

interactions than online and could decode the emotional context of a message better in a FTF

context than online. The PASW correlations test conducted on the measure produces results

showing a score of .924, which shows significance at the .01 levels for a 2-tailed test.

H1 proposed that participants would view themselves more charitable than others when

dealing with identity. This was supported from the findings of the research. The research

questionnaire had three questions dealing with this, which provided results. Those questions

were 11, 12, and 14.

Question 11 from the survey asked if their Facebook page adequately represents how

they see themselves honestly. The mean result was 3.82 on the scale of 1-5 showing an answer

of agree to strongly agree. In comparison, question 12 asked if the way they presented

themselves in a FTF interaction represented how they viewed their identity, which showed a

slightly higher mean result of 4.17. The results indicated an agree to strongly agree from the

participants, but only with a difference level of .35. Question 14 asked if they thought other

people are open and honest in what they say about their personal identity on Facebook, and this

showed a mean result of 3.07, which is an answer of neutral on the provided scale. This is a

difference of 1.09, showing a correlation that participants view themselves as being more honest

than their counterparts.

Interestingly, the results from the questionnaire showed that although participants viewed themselves fairly accurately online, they did not feel the same about other people's identity portrayal on their Facebook account. This would support the first hypothesis that participants do feel that their own identity is more accurately displayed than what they view others as being.

With regards to research questions one and two which dealt with privacy concerns on Facebook, in particular, if Facebook patrons actively use the identity protection features available to them and if they view Facebook as having adequate safety controls. Results showed a very high correlation of 4.7 or strongly agree regarding patrons ability to protect their identity on Facebook. This would suggest that there are perceived adequate privacy controls available to patrons of Facebook. In regards to how proactive patrons are at utilizing the identity protection features available to them, results also showed an extremely high correlation of 4.97, indicating strongly agree. This would suggest that not only do Facebook patrons feel that privacy features are adequate, but they also utilize them to what is perceived to be adequate for identity protection.

The data indicated significance with regards to hypothesis two which states that participants will have an idealistic perception of the safety features utilized on Facebook, making them feel safer than what they actually might be. As mentioned in the literature review above, safety is a concern for Facebook and it is highly criticized for not having adequate controls. This would suggest a sort of naïve or idealistic perception of the online security that is actually available or utilized.

Academic Performance

Of particular interest regarding academic performance and Facebook use, the overall

GPA for all 130 participants was 3.47 with Facebook users matching that GPA also with a 3.47.

The 11 reported Non-users of Facebook had a slightly higher GPA at 3.49. These first criteria of

non-users vs. users of Facebook results did not indicate any significance.   However, in order to

establish significance, two more criteria had to be established: low to medium users, and high

users.

The second criteria of low to medium Facebook users included a slightly expanded view

of how much time would be included on both parts. In particular, Facebook users were now

considered participants who spend more than one hour per day on the site.   Non-Facebook users

were considered participants who spent less than 15 minutes online a day or one hour per week.

This group of low to medium Facebook users yielded 51 participants who fell into the Facebook

user's category and 34 participants who fell into the non-Facebook user's category. The low to

medium Facebook users had an average GPA of 3.36 and the non-Facebook users had a GPA of

3.56. Data therefore indicated some level of significance but nothing in comparison to the grade

point average drop that the Karpinski (2009) study claimed.

In an effort to give a more equal sample distribution of Facebook to non-Facebook users,

and to show a more significant result, a third criteria of high Facebook users was established. In

particular, non-Facebook users were considered as spending less than 1.75 hours per week on

Facebook or not having an account at all and Facebook users are considered as spending more

than 2 hours per day on their account. With this new criterion, there were 22 non-Facebook

users and 23 Facebook users. The average GPA for non-Facebook users is 3.77 and the average

GPA for Facebook users is 3.30. On a grade scale, this would mean a GPA grade of B+ for

Facebook users and a GPA of A- for non-Facebook users. Therefore, some significance is

evident with regards to academic performance. See the graph below for a visual comparison of

these numbers.

Figure 2. Academic Performance of Facebook vs. Non-Facebook Users

According to criteria of low, medium and high Facebook users.
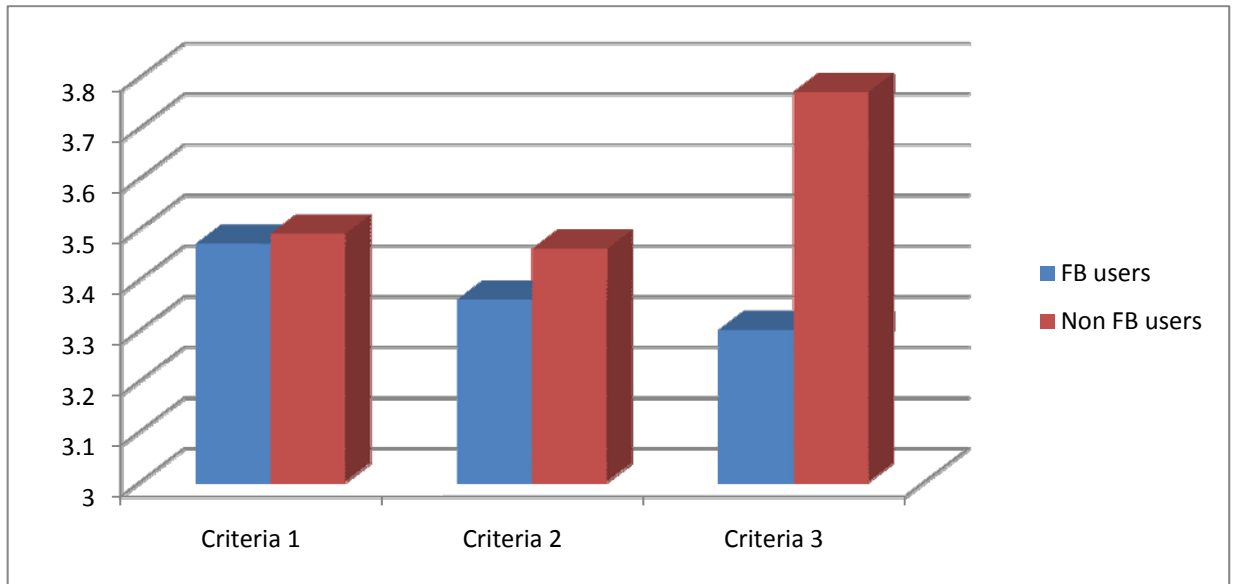
The data reported in the graph above shows how with the expansion of criteria to low, medium,

and high, there is a significant difference in reported GPA of the participants.   These results

support Research Question number two, which asks if a high use of Facebook correlates with

poor academic performance. According to the third criteria of high users, the answer would be

supportive. Data also provided an answer to Hypothesis four, which proposed that non-

Facebook users will have a higher GPA compared to medium or high Facebook users.   The data

indicates that there is a direct correlation between the two variables.

Nonverbal Decoding

To test the nonverbal decoding, Group A, Group B, and Group C data needed to be analyzed separately. Each group was asked the same questions and required to rate the emotions they witnessed on a scale of 1-5 with 1 being strongly disagree and 5 being strongly agree. As expected, the hardest emotions to decode were subtle emotions, such as sarcasm and positivity.

Group A, who was allowed to view the dialogue, scored the most inaccurately on the four questions dealing with these emotions. Group A's specific results regarding the FTF dialogue can be found in (Appendix H). In order to compare to the actor's self-reporting score, a paired samples test was computed, which showed a significance of .704. Since this is greater than the .05 limit of statistical significance, no correlation can be drawn.

For Group B, who was allowed to listen to the dialogue, but not see the facial expressions, the participants yielded similar results. As seen in Group A, the subtle nonverbal emotions such as sarcasm and positivity were the most inaccurate. Interestingly, the male's use of sarcasm was judged significantly more accurately than the female's judged use of sarcasm. Conversely, there was a larger difference in the score of the how scared the male was compared to Group A's self - report. To view Group B's specific results regarding the FTF dialogue they viewed, see (Appendix I). However, when compared to the actor's self-reporting score using a paired samples test, a significance of .575 was reported. Since this is over the .05 limit, no significance can be reported.

For Group C, who were required to read through a script of the dialogue Group A and B viewed or heard, the participants reported a similar trend. The subtle nonverbal emotions such as sarcasm and positivity were still judged the most inaccurately. As seen in Group B, the male's

use of sarcasm was also judged significantly and more accurately than the female's judged use of

sarcasm for Group C. For Group C's specific results regarding the FTF dialogue they viewed,

(see Appendix J). However, when compared to the actor's self-reporting score using a paired

samples test, a significance of .842 was reported, meaning no significance was indicated.

Although statistical significance cannot be drawn, it is interesting to look at the following graph

to note similarities in all three group's reporting of emotional expression.

Figure 3. Comparison of Groups A, B, C, and Nonverbal Decoding
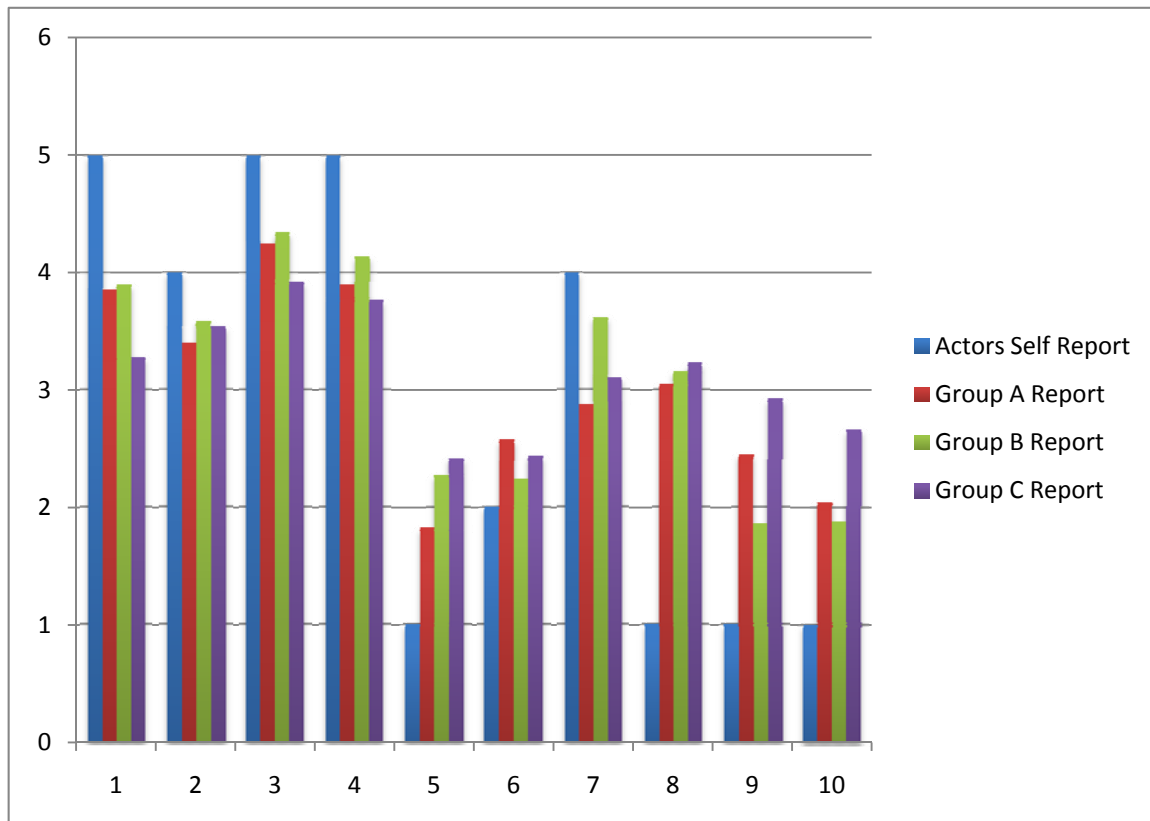
The results show that the most accurate group, scoring the closest to the actors in eight of the ten

questions is Group B, who only heard the dialogue. The group who scored the least accurately

of the three was Group C, who only scored closer in 3 questions.

Research Question three ask if participants are less able to distinguish subtle emotional nonverbal cues when reading a dialogue as compared to what they are capable of in the FTF context. Results indicate of all three groups, no significance could be found, meaning there is no statistical difference between the nonverbal decoding ability of participants to distinguish the emotions that are present in a FTF, written, or auditory context.

Emotional Decoding According to Criteria

For comparison of emotional decoding skills of overall Facebook users vs. non-Facebook users, and to answer RQ3a, the following results are reported according to Group A, B, and C, and according to the criteria of low, medium and high Facebook users as mentioned in the academic results.

Criteria 1 of no time spent on Facebook compared to any amount of time on Facebook for Group A showed a pool of 37 Facebook users to 3 Non-Facebook users who do not have an account at all. Results indicate that Facebook users were more accurate in their decoding for six of the ten questions. Non-Facebook users were more correct for 4 of the ten questions. Both groups were similarly matched on all questions. Group B showed a pool of 45 Facebook users to 5 non-Facebook users who do not have an account at all. Group B Facebook users were more accurate than their non-Facebook users for five of the questions. Non-Facebook users were more correct on five questions also. Group C showed a pool of 36 Facebook users to 4 non-Facebook users who do not have an account at all. Group C Facebook users were also more accurate than their non-Facebook users for five of the questions. Similarly, non-Facebook users were more correct on five questions also. All three groups followed a similar trend to what all participants combined indicated in their responses (see figure 3).

Criteria 2 of low to medium Facebook use for Group A showed a pool of 19 Facebook users who spent more than one hour per day on their account to 9 non-Facebook who spent less than 1 hour per week on Facebook which produced slightly different results. Facebook users were more accurate than their non-Facebook users for four of the questions. Non-Facebook users were more correct on six questions. Group B showed a pool of 19 Facebook users to 8 Facebook users using the same low to medium Facebook use criteria.

Furthermore, Facebook users were more accurate than their non-Facebook users for six of the questions. Non-Facebook users were more correct on four questions. Group C showed a pool of 16 Facebook users to 8 non-Facebook users using the same low to medium critera. Facebook users were more accurate than their non-Facebook users for seven of the questions. Non-Facebook users were more correct on three questions. This group also followed the pattern that was found from the participants as a whole when their responses were combined.

Lastly, criteria 3 of high Facebook use consisting of Facebook users spending more than 2 hours per day online, and non-Facebook users spending less than 25 minutes per day or 1.75 hours per week on their account showed the following results for the different groups. Group A showed a pool of 6 Facebook users to 13 Non-Facebook users. Facebook users were more accurate than their non-Facebook users for four of the questions. Non-Facebook users were more correct on six questions. Group B showed a pool of 5 Facebook users to 19 non-Facebook users. Facebook users were more accurate than their non-Facebook users for seven of the questions. Non-Facebook users were more correct on three questions. Group C showed a pool of 6 Facebook users to 15 non-Facebook users. Participants were most evenly matched in regards to responses made by Facebook and non-Facebook users. Facebook users were more accurate than their non-Facebook users for four of the questions. Non-Facebook users were

more correct on six questions. All groups also followed the pattern of all participants combined in their responses and were similar to what was reported in Figure 3.

The above results give insights to RQ3a, which asks if Facebook patrons are less able to distinguish subtle emotion nonverbal cues than non-users in a FTF context. Although there were slight differences between the three groups, significant changes did not exist, and thus, the answer to this question was not supported. Subtle emotions were the hardest for all groups to decode, but the difference between a Facebook user and non-Facebook user, even using the three criteria of low, medium, and high, provided no significant changes. This also provides results for Hypothesis three, which proposes that Non-Facebook users will be better at decoding subtle non-verbal emotions than will their counterparts. Data reported no difference in the three groups from the overall pattern; therefore this hypothesis was not supported.

In summary, results from this study reported that in regards to RQ1a and RQ1b, which deal with privacy features and identity protection on Facebook, the participants felt very safe disclosing their personal information on the site, and felt like adequate safety measures were in place. Data revealed that hypothesis two, which assumed that participants would have an idealistic perception of the safety features utilized by Facebook, making them feel safer than what they actually might be.

With regards to RQ2 indicating academic performance and whether Facebook use correlates with poor GPA indicated significance. Furthermore, results in regards the hypothesis four also indicated significance between low Facebook users would have a higher GPA than medium or high users. Clearly, the amount of time spent online can affect a college student's grade.

With regards to RQ3a and RQ3b that deal with subtle emotional nonverbal cues in a written context versus a FTF context and whether Facebook users are less able to distinguish these emotions, results indicated insignificant outcomes in both accounts. Therefore this leads one to believe that the ability to decode emotions has nothing to do with Facebook use and subtle emotion decoding is similar regardless the context. Furthermore Hypothesis three, which assumes Facebook users will be less able to decode emotions than their counterparts revealed no significant difference between the two groups

Thus Hypothesis one assumes that participants will view themselves more charitably than others in identity gauging situations. Data indicated significance in this case. Participants self-reported self-serving biases here with the tendency to think they are more honest in their identity disclosures online than what their counterparts are. This would go along with studies of warranting and online behavior, which show a tendency for people to question material posted from an individual online (Wather, et. al 2009).

Chapter Five

Discussion

Emotional Decoding

The three groups were somewhat similar in the first four questions dealing with anger and frustration, although none of them hit the mark that the actors chose as representing their emotions. The groups were able to decode the female's degree of frustration the most accurately out of the question set. This could be because although the female actor tended to portray this emotion in her nonverbal expression, she did not rate it as highly as anger. Another contributing factor could be that the male in the study is not usually angry, and thus not as extreme in his emotional display. Although he rated himself as a 5, or as angry as he could get, not one person rated him so, suggesting he does not express himself to the degree that he is feeling.

In regards to Question five dealing with how scared the male was feeling, as expected, Group A self-reported the actor's emotion most accurately. This supports the nonverbal decoding benefit of FTF interactions. Question six, with regards to how scared the female was feeling in the dialogue, did not support this mold as directly. Rather, the group that self-reported the female actor's emotion most closely was Group B, who listened to the dialogue. Group A, who viewed the performance, self-reported higher scores than what was recorded from the actress. One thought might be the actress' expressive facial expression.

Questions seven and eight both deal with sarcasm, which can be one of the hardest nonverbal emotions to decode. All three groups were able to more closely pick up on the male's sarcasm than the females. This is possibly due to the addition of "pretty little head" in the dialogue, which was meant to give a clue to the sarcasm that he was portraying. Interestingly, this sarcasm was transferred to the female, although her dialogue did not include any hints of this

and the self reflected emotion**.** This would suggest a sort of transference in assumption to the emotions that are experienced in a dialogue; meaning that because one person is feeling one way, the other person will be perceived as having picked up on that same emotion.

The last two questions dealt with how positive the male and female felt towards each other. All three groups scored the actors as feeling more positive towards each other than what was self-reported, although Group A and C both envisioned the female as feeling slightly less positive toward the male. This could be because regardless the qualities of acting, the actors were husband and wife, and an element of positivity would come across. However, the emotional decoding results would suggest that as expected, nonverbal behavior does help aid emotional decoding.

In regards to Facebook's effects on emotional decoding, results revealed no correlations between Facebook use and diminished nonverbal decoding skills. In fact, according to comparisons created in the criteria of low, medium, and high, Facebook users were better decoders than Non-Facebook users for Groups A, B, and C on all accounts except for high Facebook users in Group A, which was the group that was able to watch the FTF enactment of the dialogue. In this instance, the non-Facebook users were more than twice as accurate as their counterparts.

These results were surprising, showing that when you remove academic performance, and just look at the social skills of those using CMC for their social networking, there is little or no effect on their interpersonal decoding skills. This result should help in the debate of the implications of Facebook and CMC on our social skills as a whole.

Academic Performance

A strong correlation was implied with increased amount of time on Facebook and GPA, up to .5 GPA or from an A- to B+. This is not as large as the Karpinski 2009 study's findings of 1.0 GPA difference or from an A to a B, but it is enough to give pause. The reasons behind the diminished academic performance could be related to the amount of time spent online. This could be an indication of time management skills more than anything else, or it could be that poor students use and rely on Facebook more than students worried about their grades. Regardless, students should be aware that their use and possible addiction to these SNS could cost them on their GPA.

Criteria 3 of high Facebook use showed the strongest correlation between academic performance and Facebook use. It is perhaps the most reliable since sample size is almost equal using these criteria. The smallest correlation was shown in the first criteria of low Facebook use, which also had the most difference in sample size.

Identity Protection and Portrayal

The data revealed that Facebook patrons felt like there were adequate safety controls provided for them and that they used them efficiently to protect their identity. This contradicts what some of the earlier reports have been about safety concerns online and could be a sign of inaccurate belief regarding online security. Substantial research would need to be conducted with this pool of participants in order to determine if they do in fact protect their identity on their Facebook account, or just believe that they do, holding a somewhat I view of online security.

Facebook patrons also view their identity as being more accurate online than they do their counterparts which could suggest a sort of self-serving bias, showing that they view themselves in a better light than other people. In order to test if a self serving bias was in place, it would be necessary to have outside evaluator's rate the identity accuracy of participants.

Limitations

The use of emoticons with the script could have changed the results within Group C. How much it affected the academic performance or emotional decoding skills still needs to be determined. Having only 25 students who received a script with emoticons was not a large enough sample size to determine specific results regarding emoticon use in written nonverbal decoding skills for this study. However, the information could be a useful building block for future data gathering. Regardless, it needs to be noted that using it could have skewed the data for Group C.

Another consideration of the study lies with the method of testing nonverbal decoding skills based on an "acted out" script. It is unknown whether the decoding skills would have been more accurately determined had the dialogue been one that did actually occur in real life, not as a simulated argument. Since humans express emotions individually, and there are no standards for each individuals to measure themselves against, having a realistic emotional expression would have been a much more accurate bar to measure others responses to it.

A final limitation is the fact that the academic performance was measured using data from only Freshman and Sophomores. These students could have been in their first year at college, having taken general education classes that vary greatly in their expected difficulty. For example, a student might have a 4.0 but only be in their second semester, and may have only

taken bowling, art, fit for life, and English 1010. Although these classes might be difficult for some, their difficulty in comparison to other classes is questionable, and they could be skewing the data for the academic performance of these students. Possibly a more accurate representation would come from Juniors and Seniors, or students who have completed at least four semesters of college.

Also relating to academic performance is the tendency that we all have for self-serving bias. Since the study information is based on the honesty policy, it is unknown whether the self reported use of Facebook is accurate, or if the GPA reported has been approximated. Gathering data from the registrar's office could have yielded more accurate results of current participants GPA and removed the tendency for students to show themselves in a brighter light.

Future Research

Future studies need to look at the use of emoticons and decoding the written dialogue further in order to determine if it does in fact aid the accuracy of nonverbal decoding skills. Presumably, it does aid interpretation of emotions, but how much is left unknown. It would be useful to look further at academic performance on a grander scale and include data from Juniors and Seniors, rather than junior college participants. This could yield a more accurate GPA link to SNS use and time management.

Also, studies investigating if someone is a Facebook user and quantifying it by how much time they spend online, but also including how they use this SNS need to be considered. The present study left it unclear as to whether academic performance was affected by the amount of time spent on Facebook, or whether it was a time management concern in how the SNS was used that led to the diminished academic performance. A more in-depth look at the implemented

privacy features could be beneficial as well in determining if the perception of being safe on Facebook is accurate. It would be helpful to have a survey conducted that listed out the privacy features available on Facebook, with corresponding questions about how many of them are actually used. This should clarify whether the safety controls are in fact adequate, and if the perception of feeling safe on Facebook is warranted.

The debate on nonverbal decoding skills is something worthy of more study. However, controlling all the variables that go into emotional decoding is a difficult task. It would be helpful to have a controlled quantitative study that is able to isolate out emotions from the other variables in place in order to really know if the amount of time spent online is affecting human's ability to decode subtle emotions. Culture would need to be controlled for, as would relationships involved. The increased dependency on CMC for social interactions does pose a need for this type of research to continue.

Final Thoughts

The media landscape has needed to adapt in recent decades to include a more personalized communication environment that revolves around CMC. Traditional mass media communication formats are being adapted, and while this causes stress and consternation for some stuck in the change, it doesn't mean all is going to be bad. Although CMC seemingly is replacing FTF conversations, it could just be adding to it (Campbell & Park, 2008). Society is shifting toward a new personal communication society that includes instant gratification and conversations, which holds both positive and negative effects for those experiencing the change.

Selwyn (2004) claims a digital divide of sorts is happening in our society today where people are either embracing technology for all of the 'techno-utopian' positions it seems to be

creating or engaging in a sort of fatalistic loom and doom perception where increased reliance on technology is going to lead the world to chaos. Whether a divide to that degree is present or not, it is clear through this study that current assumptions about the effects of SNS in particular could be unwarranted. It was surprising that nonverbal decoding skills were not more affected by increased reliance on Facebook. Common sense for someone on the fatalistic side would say that spending more time online would mean that you are spending less time in FTF interactions, which would cause a lesser ability in skills needed for the traditional communication format. This seems to not be the case. Although social structures are not going to be unaltered by increased reliance on CMC, the use of technology in our everyday lives could "nourish and enhance our public sphere, or could equally provide another vehicle for the incorporation of progressive politics and ideals into the grubby raw maw of market rapacity" (Golding, 1996, p. 85).

This study's findings regarding academic performance being affected by .5 on a GPA scale is enough to show that there is a correlation between Facebook and academic performance. Of course, correlation does not equal causation, but it does show that reliance on technology is enabling and disabling at times. Whether or not these results will be jumped on as bolstering one side or the other of the digital divide is unknown. The progressive understanding of the complexities revolving around this new technologically driven society should be something that is well studied with robust, survey-based studies and qualitative work designed to dissect the complexities of the cost and benefits surrounding a CMC centered generation. However, results should also be taken with caution, being careful not to formulate results in an effort to reinforce a particular bias.

The present study was an eye-opener on different levels for the researchers involved. Hypotheses were proven incorrect and societal assumptions about the negative effects of reliance on CMC proven premature at best. What was learned, however, is that the debate on the benefits and costs surrounding CMC needs further clarification. More research is needed to substantiate any findings that researchers in this early phase of data gathering are making. It is becoming harder to find subjects to test on who do not rely on CMC for social interaction. This makes polarizing the data near to impossible. Rather than taking the stance that CMC needs to be studied on a particular side of the divide as good or bad, user or non-user, more complex criteria will need to be established.

Golding (1996) offers a conclusion on the debate over the good or bad of a technologically driven society well by saying,

> We are now witnessing the 'mediatization' of new technologies, as they
> follow past scenarios of commercialization, differentiated access,
> exclusion of the poor, privatization, deregulation and globalization. We
> find ourselves staring at the arrival of a tool that could nourish and
> enhance the public sphere, or could equally provide another vehicle for
> the incorporation of progressive politics and ideals into the grubby raw
> maw of market rapacity (p. 85).

There is a divide in how technology is currently seen by society. Whether or not large changes will happen in regards to how we fundamentally communicate is yet to be seen. Hopefully the findings that are drawn along the way will be used as clarification points, and the future progress of understanding communication in a technologically driven world will continue to be forged.

The social network debate is far from over. The effects of CMC on academic performance and

nonverbal decoding skills are just the tips of icebergs that have yet to be explored.

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Appendix A

Thank you for participating in a brief experiment about nonverbal emotion decoding and Facebook. This study is conducted by Malynda Bjerregaard, a graduate student in the Department of Communication at Southern Utah University. The experiment should take less than ten minutes. You will be asked to view a dialogue via a video, auditory recording, or script and rate the emotional display of the two characters on a scale of 1-5. You will also be asked to complete a short survey asking questions regarding your Facebook use and academic standing at Snow. Sample questions from this survey include, "What is your current GPA", "On average, how many hours a day do you spend on Facebook?", and "On a scale of 1-5 with 5 being very trusting, how do you rate you're your trust in the Facebook site to provide identity protection for you?" You may skip any question you do not wish to answer. Participation is voluntary. You may discontinue at any time for any reason without penalty. You may ask questions at any time. Participation in the survey is anonymous. Data that could identify you as a research subject will not be collected.

If you have any questions about this study, please contact Malynda Bjerregaard at Snow College, office phone: (435) 283-7423. Thanks again for your participation and help with this research!

<u>Facebook Self-disclosure Survey</u>

1. Gender: (circle one) Male   Female

2. Age: _____

3. Classification: (circle one) Freshman   Sophomore

4. Current GPA_____

5. Do have a Facebook account? (circle one) Yes   No

6. As accurately as you can, how long have you had a Facebook account?   (Include months and years)   _____months _____years _____n/a

7. On average, how many hour(s) a day do you view and communicate through Facebook? (hours per day)____ (hours per week)____

8. If you have a Facebook account, which would you prefer most, to communicate with **<u>family</u>** on Email or Facebook?   (circle one)   Email   Facebook   N/A

9. If you have a Facebook account, which would you prefer most, to communicate with **<u>friends</u>** on Email or Facebook? (circle one)   Email   Facebook   N/A

Answer the following questions using this scale:

Strongly Disagree   Disagree   Neutral   Agree   Strongly Agree

    1   2   3   4   5

10. My interaction with Facebook affects my academic performance at school negatively. (Circle one) 1   2   3   4   5   N/A

11. My Facebook page adequately represents how I see myself honestly. (circle one)   1   2   3   4   5   N/A

12. They way I show myself in Face-to-Face interactions adequately represents how I see myself honestly. (Circle one)   1   2   3   4   5   N/A

13. I am open and honest with what I disclose on Facebook in regards to my personal identity. (Circle one)   1   2   3   4   5   N/A

14. I think other people are open and honest in what they say about their personal identity on Facebook. (Circle one)   1   2   3   4   5   N/A

15. I am able to decode the emotional context of a message on Facebook wall messages and news feeds. (Circle one)   1   2   3   4   5   N/A

16. I am able to decode the emotional context of a message presented in Face-to-Face interactions. (Circle one)   1   2   3   4   5   N/A

17. I can protect my identity easily on Facebook. (Circle one)1   2   3   4   5   N/A

18. I am proactive about protecting my identity and utilizing the identity protection features on Facebook. (Circle one)   1   2   3   4   5   N/A

Appendix B

Group A

Instructions: Watch and listen to the dialogue being portrayed by the individuals. Please rate each answer based on your first impression. Answer each question using quickly formed opinions or instincts.

Rate each question on the following scale of 1-5 according to the following:

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

1. The male in this scenario appeared angry.
    1   2   3   4   5   N/A

2. The female in this scenario appeared angry.
    1   2   3   4   5   N/A

3. The male in this scenario appeared frustrated.
    1   2   3   4   5   N/A

4. The female in this scenario appeared frustrated.
    1   2   3   4   5   N/A

5. The male in this scenario appeared scared.
    1   2   3   4   5   N/A

6. The female in this scenario appeared scared.
    1   2   3   4   5   N/A

7. The male in this scenario used sarcasm.
    1   2   3   4   5   N/A

8. The female in this scenario used sarcasm.
    1   2   3   4   5   N/A

9. The male in this scenario felt positively toward the female.
    1   2   3   4   5   N/A

10. The female in this scenario felt positively toward the male.
    1   2   3   4   5   N/A

Group B

Instructions: Listen to the dialogue being portrayed by the individuals. Rate each question based on your first impression. Answer each question quickly, using quickly formed opinions or instincts.

Rate each question on the following scale of 1-5 according to the following:

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

1. The male in this scenario appeared angry.
    1   2   3   4   5   N/A

2. The female in this scenario appeared angry.
    1   2   3   4   5   N/A

3. The male in this scenario appeared frustrated.
    1   2   3   4   5   N/A

4. The female in this scenario appeared frustrated.
    1   2   3   4   5   N/A

5. The male in this scenario appeared scared.
    1   2   3   4   5   N/A

6. The female in this scenario appeared scared.
    1   2   3   4   5   N/A

7. The male in this scenario used sarcasm.
    1   2   3   4   5   N/A

8. The female in this scenario used sarcasm.
    1   2   3   4   5   N/A

9. The male in this scenario felt positively toward the female.
    1   2   3   4   5   N/A

10. The female in this scenario felt positively toward the male.
    1   2   3   4   5   N/A

Group C

Instructions: Read to the attached dialogue being portrayed by the individuals. Rate each question based on your first impression. Answer each question quickly, using quickly formed opinions or instincts.

Rate each question on the following scale of 1-5 according to the following:

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

1. The male in this scenario appeared angry.
    1   2   3   4   5   N/A

2. The female in this scenario appeared angry.
    1   2   3   4   5   N/A

3. The male in this scenario appeared frustrated.
    1   2   3   4   5   N/A

4. The female in this scenario appeared frustrated.
    1   2   3   4   5   N/A

5. The male in this scenario appeared scared.
    1   2   3   4   5   N/A

6. The female in this scenario appeared scared.
    1   2   3   4   5   N/A

7. The male in this scenario used sarcasm.
    1   2   3   4   5   N/A

8. The female in this scenario used sarcasm.
    1   2   3   4   5   N/A

9. The male in this scenario felt positively toward the female.
    1   2   3   4   5   N/A

10. The female in this scenario felt positively toward the male.
    1   2   3   4   5   N/A

Appendix C

Script 1(Given to Group C part 1)

Male: What's going on here?

Female: Nothing. Why do you ask?

Male: You're acting different today. Is there something going on that I should know about?

Female: You question me all the time. I am just peeling potatoes. What is the big deal?

Male: The big deal is that I am unaware of what goes on in that pretty little head of yours.

Female: You should trust your instincts more than that.

Male: If I felt like I could trust them, I wouldn't be asking.

Female: Whatever.

Script 2 (Given to Group C part 2)

Male: What's going on here? ☹

Female: Nothing…Why do you ask?

Male: Cause you're acting "different" today. Is there something going on that I should know about? ☹

Female: You question me all the time. I am just peeling potatoes. What is the big deal? ☹

Male: The "big deal" is that I am unaware of what goes on in that "pretty little head of yours."

Female: You should trust your instincts more than that. ☹

Male: If I felt like I could "trust" them, I wouldn't be asking. ☺

Female: Whatever. 😐

Appendix D

Script given to actors:

Male: What's going on here? (angry)

Female: Nothing. Why do you ask? (surprised, defensive, a bit scared)

Male: Cause you're acting 'different' today. Is there something going on that I should know about. ('acting different' is said sarcastically. The last statement is said curtly)

Female: You question me all the time. (said under her breath, upset and tired). I am just peeling potatoes. What is the big deal? (exasperated and a little scared).

Male: The big deal is that I am unaware of what goes on in that pretty little head of yours. ('big deal' is sarcastic as is 'pretty little head of yours')

Female: You should trust your instincts more than that. (a little quiet but extremely angry that he is not trusting her again)

Male: If I felt like I could trust them, I wouldn't be asking. (angry)

Female: Whatever. (shuts down)

The intent of this script is to portray a male who greatly distrusts his wife. He is controlling, angry, and untrusting. She is tired of his attitude and greatly unsatisfied with the relationship. He uses sarcasm with words like "differently", "big deal" and "pretty head of yours." She responds angrily at the sarcasm and shuts down on "whatever."

Appendix E

Results from actor's self-reported emotion use:

Female self reported answers:

1. The female in this scenario appeared angry. 4
    1   2   3   4   5   N/A

2. The female in this scenario appeared frustrated. 5
    1   2   3   4   5   N/A

3. The female in this scenario appeared scared. 2
    1   2   3   4   5   N/A

4. The female in this scenario used sarcasm. 1
    1   2   3   4   5   N/A

5. The female in this scenario felt positively toward the male. 1
    1   2   3   4   5   N/A

Male subject self reported emotions

1. The male in this scenario appeared angry. 5
    1   2   3   4   5   N/A

2. The male in this scenario appeared frustrated. 5
    1   2   3   4   5   N/A

3. The male in this scenario appeared scared. 1
    1   2   3   4   5   N/A

4. The male in this scenario used sarcasm. 4
    1   2   3   4   5   N/A

5. The male in this scenario felt positively toward the female. 1
    1   2   3   4   5   N/A

Appendix F

Research Script

Thank you for participating in a brief experiment about nonverbal emotion decoding and Facebook. This study is conducted by Malynda Bjerregaard, a graduate student in the Department of Communication at Southern Utah University. The experiment should take less than ten minutes. You will be asked to view a dialogue via a video, auditory recording, or script and rate the emotional display of the two characters on a scale of 1-5. You will also be asked to complete a short survey asking questions regarding your Facebook use and academic standing at Snow. Sample questions from this survey include, "What is your current GPA", "On average, how many hours a day do you spend on Facebook?", and "On a scale of 1-5 with 5 being very trusting, how do you you're your trust in the Facebook site to provide identity protection for you?" You may skip any question you do not wish to answer. Participation is voluntary. You may discontinue at any time for any reason without penalty. You may ask questions at any time. Participation in the survey is anonymous. Data that could identify you as a research subject will not be collected.

If you have any questions about this study, please contact Malynda Bjerregaard at Snow College, office phone: (435) 283-7423. Thanks again for your participation and help with this research!

Appendix G

Average of what participants felt in regards to privacy and identity protection on Facebook on a scale of 1 to 5 with 1 being strongly disagree and 5 being strongly agree

1. My interaction with Facebook affects my academic performance.   (2.34 average score)

2. My Facebook page adequately represents how I see myself honestly. (3.02 average score)

3. The way I show myself in Face to Face interactions adequately represents how I see myself honestly. (3.72 average score)

4. I am open and honest with what I disclose on Facebook in regards to my personal identity. (3.47 average score)

5. I think other people are open and honest in what they say about their personal identity on Facebook. (2.69 average score)

6. I am able to decode the emotional context of a message on Facebook wall messages and news feeds. (3.09 average score)

7. I am able to decode the emotional context of a message presented in Face-to-Face interactions. (4.12 average score)

8. I can protect my identity easily on Facebook. (2.94 average score)

9. I am proactive about protecting my identity and utilizing the identity protection features on Facebook. (4.12).

Appendix H

Group A nonverbal decoding average results on a scale of 1-5 with 1 being strongly disagree and 5 being strongly agree

1. The male in this scenario appeared angry. (3.9 average score)

2. The female in this scenario appeared angry. (3.4 average score)

3. The male in this scenario appeared frustrated. (4.3 average score)

4. The female in this scenario appeared frustrated. (3.9 average score)

5. The male in this scenario appeared scared. (1.8 average score)

6. The female in this scenario appeared scared. (2.6 average score)

7. The male in this scenario used sarcasm. (2.9 average score)

8. The female in this scenario used sarcasm. (3.1 average score)

9. The male in this scenario felt positively toward the female. (2.5 average score)

10. The female in this scenario felt positively toward the male. (2.1 average score)

Appendix I

Group B nonverbal decoding average results on a scale of 1-5 with 1 being strongly disagree and 5 being strongly agree

1. The male in this scenario appeared angry. (3.9 average score)

2. The female in this scenario appeared angry. (3.6 average score)

3. The male in this scenario appeared frustrated. (4.3 average score)

4. The female in this scenario appeared frustrated. (4.1 average score)

5. The male in this scenario appeared scared. (2.3 average score)

6. The female in this scenario appeared scared. (2.2 average score)

7. The male in this scenario used sarcasm. (3.6 average score)

8. The female in this scenario used sarcasm. (3.2 average score)

9. The male in this scenario felt positively toward the female. (1.9 average score)

10. The female in this scenario felt positively toward the male. (1.9 average score)

Appendix J

Group C nonverbal decoding average results on a scale of 1-5 with 1 being strongly disagree and 5 being strongly agree

1. The male in this scenario appeared angry. (3.3 average score)

2. The female in this scenario appeared angry. (3.5 average score)

3. The male in this scenario appeared frustrated.   (3.9 average score)

4. The female in this scenario appeared frustrated.   (3.8 average score)

5. The male in this scenario appeared scared.   (2.4 average score)

6. The female in this scenario appeared scared. (2.4 average score)

7. The male in this scenario used sarcasm. (3.1 average score)

8. The female in this scenario used sarcasm. (3.2 average score)

9. The male in this scenario felt positively toward the female. (2.9 average score)

10. The female in this scenario felt positively toward the male. (2.7 average score)