PATTERNS OF TECHNOLOGY USE AND RELATIONAL OUTCOMES AMONG

EMERGING ADULTS

By

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Technology has become a prevalent part of daily life, leading to new patterns of

communicating and interpersonal dynamics. Despite the impact of technology on relationships,

research focusing on technology as it applies to couples and families has been very limited.

Although it has been shown that technology can have both positive and negative relational

outcomes the understanding of how it is influencing relationships is still lacking. Additionally,

research has not adequately addressed the effects among emerging adults who are of particular

interest because they use technology at the greatest rates and are at a significant developmental

phase for learning to navigate their relationships. The current study used data that was collected

at East Carolina University, including 614 total participants. The purpose of the current study is

to evaluate the connections between patterns of technology use, jealousy, and relationship

satisfaction among an emerging adult sample using attachment theory as the theoretical

foundation. The research questions being addressed include: 1) Are patterns of technology use,

and patterns of technology use with one's romantic partner predicted by one's attachment style?

2) What is the nature of the connection between technology and attachment, and experiences of

jealousy in emerging adults' romantic relationships? 3) In what ways are attachment, technology

use, technology use with one's romantic partner, and experiences of jealousy predictive of

relationship satisfaction during emerging adulthood? Regarding the first research question, the results indicate that increased attachment insecurity was related to higher frequency of technology use and technology use with romantic partner. Next, the results indicated that attachment insecurity was related to increased rates of jealousy, and a trend was found between technology use and jealousy. Finally, the results indicated that increased attachment insecurity and jealousy both negatively impacted relationship satisfaction. Technology use not found to be predictive of relationship satisfaction, indicating that potentially technology use only impacts relationship satisfaction through its influence on jealousy.

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CHAPTER 1: INTRODUCTION

Technology has become a pervasive aspect of life that presents unique benefits and challenges that were not faced by previous generations. The average amount of time spent using social network technology increased by 82% in 2009 in comparison to previous years, with nearly half of internet users in America having at least one profile online (Webster, 2010; Whitney, 2010). In addition to a significant increase in internet technology, the number of mobile phone subscriptions increased drastically from 49 subscriptions to 95 subscriptions per 100 people in the decade between 2002 and 2012 (International Telecommunication Union, 2014). Previous research has expressed that social norms and behavior could potentially be altered as a result of increased social technology use (Williams & Edge, 1996). It has been suggested that recent generations are experiencing an increased sense of closeness to others granted by technology, but that this technological closeness has not been matched by a sense of psychological closeness (Konrath, 2012). This study will attempt to address how an emerging adult's attachment style relates to their use of technology in relationships, and predicts their resulting feelings of jealousy and relationship satisfaction within a sample of college students.

Need for the Study

Technology has influenced the ways individuals communicate and interact with one another, particularly for "digital natives" such as adolescents and college students who are more familiar with using technological means to communicate in their relationships (Prensky, 2001). The use of communication technology and social networking sites has been shown to offer some benefits to individuals in relationships, but can also lead to detrimental outcomes (Coyne, Stockdale, Busby, Iverson, & Grant, 2011).

The majority of adolescents in the United States own cell phones and have internet access, resulting in a substantial portion of their time being spent using technology to

communicate with others (Madden, Lenhart, Duggan, Cortesi, & Gasser, 2013). Research has demonstrated both positive and negative outcomes of technology use for adolescents, but there is increasing evidence to suggest that adolescents may also use technology to threaten, harass, and stalk their dating partners (Draucker & Martsolf, 2010). The aforementioned behaviors are all consistent with behaviors indicative of domestic violence according to the Centers for Disease Control and Prevention (2014). In addition to physical, sexual and emotional violence, domestic violence also includes behaviors intended to monitor or control the victim. Technology has made partners more accessible to one another and has increased the potential of dating violence by making it possible for them to engage in abusive behavior even when they are apart (Baker & Carreno, 2016). In a previous study, 60% of college students reported using Facebook to monitor their partners, friends, or acquaintances, indicating that surveillance behaviors are very common for social network users even when they have not escalated to stalking or abusive behaviors (Stern & Willis, 2007). Technology use has been connected to increased trust and jealousy in relationships, particularly in regards to monitoring behaviors (Lucero et al., 2014).

Williams (2012) indicated that adolescents may interpret jealousy and controlling behavior as signs of their partner's affection, rather than viewing them as abusive and harmful. Although the current study is examining a college-aged population, romantic experiences during adolescence has been linked to the quality of relationships later in life during early adulthood (Bouchey and Furman, 2003; Madsen and Collins, 2011). Understanding the role that jealousy plays in relationships is critical, especially when considering that jealousy is experienced collectively by individuals regardless of contextual factors such as sexual orientation, social location, culture, age, or relationship status (Bernhard & Bernhard, 1986). Although minimal levels of jealousy are generally considered to be harmless and a normal human experience, more

extreme levels can lead to negative outcomes such as relationship dissolution, depression, anxiety, domestic violence, suicide and homicide. (Mullen & Martin, 1994; Barelds & Barelds-Dijkstra, 2007; Bernhard & Bernhard, 1986; Puente & Cohen, 2003). Research has demonstrated that jealousy and attachment both serve significant purposes for couple satisfaction, yet the understanding of how they interact to influence satisfaction is still limited (Feeney, 1999; Pheiffer & Wong, 1989; Dandurand & Lafontaine, 2014).

At a societal level attachment anxiety has been decreasing over the past decade, particularly for young adults. It is possible that with increased technology people are perceiving a greater availability of close relationships, accounting for the decreased anxiety (Chopik & Peterson, 2014). However, the perception of closeness does not necessarily indicate that people are experiencing more fulfilling relationships. For instance, there has not been a change in levels of attachment avoidance, indicating that the sense of psychological closeness is lacking (Chopik & Peterson, 2014; Konrath, 2012). While technology may relieve some individuals' relational anxiety, there is evidence to suggest that people experience jealousy differently based on their attachment style.

Findings from a series of two studies indicated that anxious attachment is positively associated with Facebook jealousy and surveillance, while avoidant attachment was negatively associated with jealousy and surveillance behaviors. Researchers suggested that anxious individuals checked their partners' Facebook accounts more frequently as a reaction to their jealousy, which may have created a vicious cycle where they then experienced greater jealousy and mistrust (Marshall, Bejanyan, Castro, & Lee, 2013).

Purpose of the Study

The purpose of the current study is to investigate the influence that technology has on developing romantic relationships within the context of attachment theory. This study will address the nature of the relationship between participants' attachment orientation, technology use, experiences of jealousy, and their relationship satisfaction. Research questions examined in this study include: 1) Does a participant's attachment orientation predict their frequency of technology use on a regular basis and with their partner? 2) Does a participant's attachment orientation, technology use, and technology use with their romantic partner predict their reported experiences of jealousy towards their partner? 3) What is the relationship between technology use, technology use with one's partner, attachment orientation, and reported feelings of jealousy in regards to their reported relationship satisfaction? Hypotheses for this study include the following:

H1: Participants who demonstrate secure attachment are expected to report less technology use, whereas participants who indicate an insecure attachment orientation are expected to report using technology more frequently.

H2: Participants who exhibit a secure attachment orientation are anticipated to report less jealousy. In contrast, participants with an anxious or avoidant attachment orientation are projected to report higher rates of jealousy.

H3: It is anticipated that participants who are more securely attached and reported less jealousy will report greater relationship satisfaction. Higher rates of jealousy, technology use, and technology use with one's romantic partner are expected to negatively impact the relationship satisfaction reported by participants who exhibit anxious or avoidant attachment.

The research questions and hypotheses are based on previous research findings examining technology use, attachment, jealousy, and relationship satisfaction. Various

researchers have indicated that attachment style is a potential predictor of distress connected to jealousy in adult romantic relationships (Knobloch, Solomon, & Cruz, 2001; Levy & Kelly, 2010; Levy, Kelly, & Jack, 2006). Jealousy is frequently considered a damaging aspect of relationships due to its link to prospective negative relationship outcomes, and negative effect on couple satisfaction (Carson & Cupach, 2000). Research has provided insight into the vital link between jealousy and attachment processes, such as regulating emotions and coping with threats to the relationship, and couple satisfaction (Bevan, 2008; Mikulincer &Shaver, 2007). The prevalence of technology has added another component to relationships and presents another factor contributing to jealousy in relationships. While there are benefits of technology use in relationships, there is abundant evidence to indicate that the use of social networking sites can exacerbate romantic jealousies (Bevan, 2013).

Conclusion

The upcoming chapter will consist of a literature review providing more information on the relationship between attachment style, technology use, jealousy, and relationship satisfaction (Chapter 2). Following the literature review, the next two chapters will include the methodology used for the current study (Chapter 3), and a publishable article with the results of the study (Chapter 4). The final chapter will discuss the research findings, as well as the clinical implications and limitations of the current study (Chapter 5).

CHAPTER 2: BACKGROUND

Technology has become an integral part of our daily lives, and is altering the way we interact with one another. Communication technologies, such as email, social media sites and texting, are inherently social in nature and therefore naturally anticipated to affect interpersonal relationships (Goodman-Deane, Mieczakowski, Johnson, Goldhaber, Clarkson, 2016). These technology mediums are being used at staggering rates, particularly among emerging adults. When considering mobile phone use alone, over a billion text messages are sent worldwide every day (Bargh & McKenna, 2004). Communication technology appears to be utilized by individuals in ways that maximize their needs and comforts, often leading to the development of new interaction patterns (Katz & Aakhus, 2002). Although there is a growing body of research on how technology is impacting relationships, it is essential to examine how emerging adults are using technology in romantic relationships, and its impact over the course of their relationships.

The current study aims to explore how the attachment orientation of emerging adults predicts their patterns and potential outcomes of technology use, including relationship quality and jealousy. The remainder of the background section will focus on attachment theory as the theoretical foundation of the current study, and the factors of technology use, relationship satisfaction, and jealousy as they relate to romantic relationships of emerging adults.

Theoretical Foundation: Attachment Theory

The current study is based on attachment theory, which provides a valuable theoretical perspective when considering emerging adult relationships. Attachment theorists assert that children develop an attachment style based on their early relationships with their parents and other caregivers. In turn, the interactions that people experience early in life form templates that shape how they approach relationships and their expectations of others in the future (Hazan &

Shaver, 1987). Bowlby (1973) believed that these templates, which he referred to as internal working models, and their resulting behaviors are significant features of personality contributing to an individual's view of others and their sense of self. Working models form expectations of others based on whether the attachment figure is judged to be someone who will be responsive to the child's needs, and of themselves depending on whether or not they perceive themselves to be someone who the attachment figure is likely to respond to (Bowlby, 1973). Children with responsive and reassuring caregivers are able to develop appropriate regulatory strategies, including coping skills and awareness that they are able to depend on others when needed, resulting in a secure attachment style. Individuals who do not experience secure attachment are said to have an insecure attachment style, which is commonly categorized as either anxious attachment or avoidant attachment (Bowlby, 1969, 1979).

An anxious attachment style can be the result of unpredictability in the child-parent relationship, meaning that the primary attachment figure was inconsistently responsive to the child's needs. As a result, the child may become hypervigilant towards their caregiver and have trouble forming a sense of security and trust (Bowlby, 1979). Previous research has indicated that adults with anxious attachment styles prioritize intimacy in their romantic relationships but often have difficulty achieving the level of intimacy that they desire (Feeney & Knoller, 1991). Anxious partners' experiences of love involve obsessive preoccupation, strong desire for responsiveness and unity, emotional highs and lows, and extreme attraction and jealousy (Hazan & Shaver, 1987).

Avoidant attachment often develops due to maladaptive responses that children receive from caregivers, such as rejecting or dismissing the child's pleads for attention and help, causing children to learn to contain their signs of distress (Ainsworth, Blehar, Waters & Wall, 1978).

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Adults who demonstrate avoidant attachment styles may perceive other people as untrustworthy or unsupportive, causing them to be uncomfortable with emotional intimacy and dependency. In addition to fear of intimacy, avoidant individuals often demonstrate emotional highs and lows, and jealousy in their relationships (Hazan & Shaver, 1987).

There is increasing evidence to suggest that parental attachment relationships provide a significant indicator of individual well-being (Guarnieri, Smorti & Tani, 2014). As previously mentioned, secure attachments are associated with greater autonomy, trust and support in comparison to insecure attachments. Secure attachments have been found to promote successful development towards adulthood, and provide a beneficial foundation for various aspects of psychological well-being across the lifespan (Shulman, Kalnitzki, & Shahar, 2009; Guarnieri, Snorti, & Tani, 2014). In contrast to the relationship experiences of insecurely attached individuals, securely attached people are more likely to describe their significant experiences of love as happy, friendly, and trusting. Relationships involving securely attached partners last longer on average in comparison to insecurely attached couples (Hazan & Shaver, 1987).

Threats to Attachment

The security of a relationship, whether with a child's caregiver or an individual's partner, is based on the perceived availability of the attachment figure. Availability is not simply the presence of an attachment figure, but rather the culmination of accessibility, responsiveness, and open communication. Accessibility and responsiveness are the key factors contributing to availability, and are further facilitated by the additional feature of open communication (Bowlby, 1973). Secure individuals can depend on their attachment figure to be accessible physically, psychologically and emotionally, and to respond in an appropriate way when they are needed (Bowlby, 1973). The importance of open communication increases with age, and provides an essential means for assuring accessibility and responsiveness in adulthood (Kobak, 1999).

Attachment insecurity can develop for children and adults alike if an attachment figure's availability, including any of its contributing factors, is threatened (Holman, Galbraith, Timmons, Steed, & Tobler, 2009).

Attachment has come to be understood as a relational construct, rather than a stable element of personality. Kobak (1999) suggested that "attachment security results from a dynamic transaction between internal working models and the quality of current attachment relationships" (pg. 39). Research findings have demonstrated that working models developed during infancy and childhood influence an individual's perception of an attachment figure's availability later in life, but continue to change and be reassessed in the context of current relationships (Holman, et al., 2009). Remembered threats to parental availability significantly impact adult attachment insecurity, but the influence should be reduced in the context of an individual's relationship with their current romantic partner (Holman et al., 2009). Therefore, it is helpful to understand the threats to availability that can occur in infant-caregiver relationships, which bias later attachment relationships, and the availability threats that may arise in adult romantic relationships.

The dynamics of attachment relationships are governed by the same biological system, so threats to availability in infant-caregiver and adult relationships include the same core elements despite the events that constitute threats potentially varying between life phases and relationships (Fraley & Shaver, 2000; Kobak 1999). First, any experienced or perceived possibility of separation threatens the accessibility of the attachment figure. Examples of threats to accessibility include a parent or romantic partner leaving, threatening suicide, or being consumed by conflict and hostility (Bowlby, 1973; Kobak, 1999). Threats to responsiveness and accessibility are related, however parental responsiveness threats are more associated with the level of support and protection the attachment figure provides, and their ability to adequately

respond to the child when they are experiencing distress. Similarly, an individual's perception that their partner is unable or willing to respond to their conveyed needs or concerns represents a threat to responsiveness in a romantic relationship (Kobak, 1999). Lastly, the open communication component of availability is threatened when a child does not have the opportunity to express their needs and to feel heard by their caregiver. In romantic relationships, threats to open communication arise when a partner is seen as reluctant to engage in positive, continuing communication (Holman et al., 2009). If open communication is compromised and an attachment figure is consequently unaware of their child or partner's needs, they are unable to be accessible and responsive in turn (Holman, et al., 2009).

Emerging Adulthood

Emerging adulthood refers to the period of time between adolescence and adulthood, that generally includes individuals between eighteen and twenty-five years of age (Arnett, 2000). Research on emerging adulthood is critical as parental attachment, romantic relationships, and psychosocial adjustment start to intersect, and emerging adults develop more stable schemas according to their experiences during this phase of life. (Kumar & Mattanah, 2016).

The introduction of the emerging adulthood phase of development came about as a reaction to the changing demographics and cultural norms that individuals now face while transitioning to adulthood. Erik Erikson's theory of human development (1968), based upon distinct developmental stages, has been one of the most prominently held theories of human development. Rather than including a stage for individuals transitioning towards adulthood, Erikson's stages of development progressed from adolescence, beginning at puberty and lasting until the late teens, to young adulthood. Arnett (2007) argued that Erikson's theory may have been appropriate in the mid-20th century, when most people were married and entering the

workforce full-time by their early twenties, but that it no longer accounts for the normal trajectory for many individuals. Unlike previous generations, the majority of people today do not feel like they have completely reached adulthood until they have reached their late twenties or early thirties.

There have been many changes that have occurred as a society that necessitate the distinction of an emerging adulthood phase. During the past half century there has been greater participation in postsecondary education, an increased acceptance for premarital sex and cohabitation, and a shift towards individuals getting married and becoming parents at later ages in industrialized societies (Arnett, 2007). The aforementioned changes have all affected the life course experienced by young people and have created a new period where individuals no longer fit the definition of an adolescent, but are also not fully adults yet. Arnett (2004) proposed five primary features of emerging adulthood and described it as the age of identity explorations, the age of instability, the self-focused age, the age of feeling in-between, and the age of possibilities.

During the phase of emerging adulthood individuals have the greatest opportunity for identity exploration, particularly in regards to love, work, and worldviews (Arnett, 2000). In contrast to the more shallow and fleeting relationships of adolescence, relationships during emerging adulthood are often more serious and intimate than previous relationships. While emerging adults explore aspects of their own identity, they also begin to consider what kind of partner they want based on how they perceive themselves as a person. This phase allows individuals to explore a variety of romantic and sexual experiences because there is less parental involvement and minimal pressure to pursue marriage (Arnett, 2000). In recent years, technology has become a significant means of identity and relational exploration for emerging adults.

Technology Use

Technology use has become an integral part of our everyday lives, particularly for younger generations. One particular category that has become increasingly prevalent are communication technologies, referring to any form of technology that allows individuals to communicate without face-to-face interaction, such as e-mail, cellphones, and social networking sites (Ruppel, 2015). Previous literature indicates the young adults have greater access to communication technologies, and use them at a much higher rate and frequency throughout the day than other cohorts (Burdette, Ellison, Glenn, & Hill, 2009; Hargittai & Hinnant, 2008; Walker, Krehbiel, & Knowyer, 2009). According to reports from the Pew Research Center (2010, 2013), young adults between the ages of 18 and 24 reported the heaviest daily internet use compared to others who access the internet daily, and are also the most likely age group to report beginning their relationships online. Cellphones are also having an impact on interpersonal relationships, particularly for emerging adults as text messaging is one of the dominant forms of communication technology used by college students (Student Affairs Administrators in Higher Education, 2008). Additionally, cellphones are used more frequently by people involved in romantic relationships, and have become a prominent means of maintaining relationships and staying connected for current couples (Jin, 2007; Licoppe, 2004).

As described above, technology has become a means of staying connected to one another and has impacted the ways in which we interact in relationships. For instance, social networking sites provide a means that many people have employed to initiate and maintain their relationships (Marshall, Bejanyan, Castro, & Lee, 2013). In a study of high school aged individuals, participants reported using technology as a way to "test the waters" with new partners before immediately going on a date with one another. The findings indicated that technology continued to be the primary form of communication used by participants after the relationship was defined,

and that it is a common means of terminating adolescent relationships (Baker & Carenno, 2016). Despite the relationship dynamics changing during emerging adulthood, emerging adults show similar trends of technology use.

Emerging adults consistently reported higher rates of behaviors online that demonstrate they are living out their relationships through social networking sites and other technology-based mediums in novel ways compared to older cohorts. For instance, nearly half of emerging adults reported flirting online, and using social networking sites to check up on a previous romantic partner (Smith & Duggan, 2013). Online dating sites have become common among people of all ages, but mobile dating sites show the greatest popularity among emerging adults. In addition to online dating sites, 5% of young adults between the ages of 18 and 24 have used a mobile dating app, and these statistics double between the ages of 25 and 34 (Smith & Duggan, 2013).

In one study the group of emerging adult participants indicated that they prefer interacting through communication technology because it allows them to have more control during social interactions. The participants conveyed that methods that did not involve face-to-face interaction provided "the option of talking to multiple people at once, to leave large gaps in the conversation, to conceal truth, and the ability to immediately clarify misunderstandings" (Madell & Muncer, 2007; Coyne et al., 2011, pg. 151). For individuals who struggle to build relationships in-person, forming relationships online provides a safer means through which they can comfortably increase risk, and connect with others and develop greater intimacy than they would otherwise through face-to-face interactions (Buote, Wood & Pratt, 2009; Brown, 2006). Other research findings have similarly indicated that the sense of anonymity provided by communication technology allows users to risk greater self-disclosure, carefully plan how they

will interact, and connect with people based on similar values and interests (Bargh & McKenna, 2004).

In a study of individuals in romantic relationships, emerging adults were more likely to use all forms of media than older adults, particularly in regards to texting and cellphone use. Emerging adults reported texting their partner more than once a day on average while older adults rarely texted their partner. The researchers found that expressing affection was the most common reason participants used communication technology to interact with their partner, with discussing serious issues, apologizing, discussing confrontational topics, and hurting their partner occurring less frequently (Coyne et al., 2011). Communication technology has potentially made it easier for couples to express affection and increase their positive communication, which could be advantageous to the relationship, but could be detrimental if it is used negatively or is otherwise detracting from the couple relationship (Coyne et al., 2011).

Although the growing body of research regarding emerging adults and technology use provides helpful insight, there is still a great deal that remains to be understood. A few areas that still require study are how typical patterns of media use relate to individuals' perceptions of their romantic relationships, and how communication technology impacts feelings of connection and relationship satisfaction between partners (Coyne et al., 2011). Additionally, there is still relatively minimal research regarding new forms of technology and how romantic partners are using them to communicate with one another (Coyne et al., 2011), which may present a topic of ongoing research as technology continues to rapidly evolve. Despite the existing literature on how emerging adults' attachment orientation is reflected through their technology use habits, continuing research is needed to investigate what technological mediums they are using, and how it impacts aspects of the relationship. The current study aims to examine how emerging adults'

attachment orientation influences how they use technology, and how it mediates their

experiences of jealousy in romantic relationships and perceived relationship quality.

Emerging Adult Relationship Formation

Emerging adulthood involves relationship exploration which requires individuals to

overcome the developmental task of "learning how to form, maintain, and gracefully end

romantic and sexual relationships" (Snyder, 2006, p. 161). The research findings of the National

Health and Social Life Survey indicated that participants most commonly met their partners at

their place of work, at school, or at a party (Laumann, Gagnon, Michael, & Michaels, 1995).

Although the National Health and Social Life Survey was conducted prior to the widespread use

of the internet, a more recent study of emerging adults involved in romantic relationships

similarly found that the majority of the participants met their partners in educational settings,

with others meeting at social events or work (Gala & Kapadia, 2013). The majority of

relationships still begin through traditional interactions, however the percentage of Americans

who report having met their current partner online doubled between 2005 and 2013 (Smith &

Duggan, 2013). In addition to the growing use of dating sites and mobile dating apps,

communication technology has also changed the way emerging adults interact and develop

romantic relationships.

Computer-mediated communication (CMC) has been utilized to develop interpersonal

relationships since it was introduced, and has developed in various directions with the

introduction of the internet. In comparison to the limited examples of CMC in the past, CMC and

communication technology now includes a wide array of means of communication such as social

networking sites (SNS), discussion groups, and online dating services (Sprecher, 2009). The

prevalence of technology throughout society and our daily life is clear, but the impact of

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technology use on the way individuals form and maintain romantic relationships is still uncertain (Bonebrake, 2002). Although researchers are still not exactly sure how technology is altering our relationships, there is significant literature indicating some of the potential consequences of technology use on relationship formation and maintenance.

Sprecher (2009) defines online dating as the various activities during the initiation of a relationship that occur online, such as choosing a potential partner and contacting them online before having offline interactions. Emerging adults are more likely than older cohorts to report beginning their relationship online, with eight percent of individuals who are married or in a committed relationship between the ages of eighteen and twenty-nine having met their partner online. There are a plethora of online dating sites and mobile dating apps available but "meeting online" can refer to a variety of other methods, such as being introduced to someone by a friend through email or a social networking site, or meeting through a fan forum or online gaming site (Smith & Duggan, 2013). With the diverse avenues of meeting partners online, McKenna (2007, 2008) described three types of online relationship initiation.

Naturally forming relationships include relationships that begin in online venues for people with similar interests or hobbies, such as newsgroups and interactive games (McKenna, 2007, 2008). Individuals involved in these venues are not usually using them for relational reasons, but relationships can develop due to the pleasant interactions, ability to express one's self, and the level of self-disclosure fostered in these sites (Bargh McKenna, & Fitzsimmons, 2002; Mckenna et al. 2002; Joinsen, 2001). Similar to meeting someone through friends or family in traditional settings, social proximity also facilitates the initiation of relationships online, which are classified as networked relationships. Networked relationships often begin through social network sites, such as Facebook or Twitter, which allow users to connect with

other people who are associated with a current friend or acquaintance (Boyd, 2006; McKenna, 2008). Finally, targeted relationships describe those that begin with interactions between individuals through online dating sites. Individuals using dating sites often evaluate potential partners based on attributes they feel are important for long-term relationships, and demonstrate goal-directed communication to determine compatibility before meeting face-to-face (McKenna, 2007, 2008). Partners may initially find one another online and then progress to other forms of communication, such as talking on the phone, before ultimately interacting face-to-face (McKenna, Green, & Gleason, 2002). In addition to the proportion of people meeting their partners online, technology has also altered the way people form and maintain relationships even after originally meeting one another in an offline setting.

The majority of individuals first meet their partner in a face-to-face setting, but the internet and various forms of communication technology often contribute to the process of initiating a relationship (Sprecher, 2009). After initially meeting in person many people exchange contact email such as phone numbers or email addresses and become more familiar with one another through communication technology before meeting again (Rabby & Walther, 2002). Madden and Lenhart (2006) found that over a quarter of single internet users reported inviting someone on a date online. Social networking sites also provide ample information for individuals to view before initiating a relationship with a potential partner, such as their mutual friends, college major, profession, hometowns, and interests. Particularly for emerging adults, it is common to search a potential partner's profile after meeting for the first time before pursuing a relationship (Sprecher). Once a relationship is established, communication technology can also serve as a way of maintaining the relationship. For instance, texting has been shown as a

common method for partners to stay connected and increase their availability to one another, which may significantly enhance some romantic relationships (Pettigrew, 2009).

Relationship Quality and Satisfaction

Relationship satisfaction is considered one of the most significant indicators of relational stability, and individual psychosocial health and well-being across the lifespan (Bookwala, 2005; Dush & Amato, 2005). Research has demonstrated that technology has the capacity to be both beneficial and damaging to couple satisfaction depending on how it is used and perceived by the couple (Coyne et al., 2012). Additionally, attachment orientation has a significant influence on the experience of individuals in romantic relationships and their relationship quality (Kumar & Mattanah, 2016).

The research on technology's impact on relationship quality has been mixed and incongruent. Some findings indicate that the use of communication technology to maintain relationships may increase commitment, satisfaction, and communication between partners (Sidelinger, Avash, Godorhazy, & Tibbles, 2008; Coyne et al., 2011). However, other research has found that it may become problematic, increase conflict, and lead to poor relationship satisfaction (Ashlstrom, Lundberg, Zabriskie, Eggett, & Lindsay, 2012; Coyne et al., 2012; Schade et al., 2013). Coyne et al. (2012) indicated that technology use itself may not be damaging, but rather the occurrence and degree of conflict experienced by the couple over the technology use caused relationship issues. Relationship conflict frequently affects feelings of relationship satisfaction, and can lead to more negative perceptions of the individual's romantic partner and the overall relationship (Gottman & Levenson, 1992). This is particularly meaningful for emerging adults since they are more likely to use technology and therefore potentially at an increased risk of experiencing conflict due to technology use. Additionally, learning to

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successfully apply conflict management tactics during emerging adult relationships is believed to foster stability in romantic relationships later in life (Creasey & Hesson-McInnis, 2001). Research on attachment has indicated that secure parental attachment provides the foundation for relationship competence and high-quality relationships during emerging adulthood (Kumar & Mattanah, 2016).

Parental attachment has been theorized to be a strong determinant of whether emerging adults have adjusted and gained the skills needed to succeed in all areas of life, including social interactions and romantic relationships (Karre, 2015). In addition to providing a positive internal working model of relationships, various findings have indicated that parents who develop secure attachment bonds with their children model positive behavior in their relationships. In turn, emerging adults who have a secure attachment with their parents are able to develop more successful and satisfying relationships (Kumar & Mattanah, 2016). Kumar and Mattanah (2016) found that secure attachment to both parents was associated with positive adjustment outcomes during emerging adulthood, however secure attachment specifically between the emerging adult and their mother was related to greater romantic competence and relationship satisfaction. In contrast, insecure attachment may be the origin of many maladaptive behaviors that contribute to relationship dissatisfaction and termination (Hazan & Shaver, 1994).

Jealousy

Jealousy is considered to be a universal human experience, but also has the potential to be one of the most destructive emotions in romantic relationships (Bernhard & Bernhard, 1986; Buunck, & Bringle, 1987). Minimal romantic jealousy can lead to positive outcomes, including demonstrating attention and love to one's partner, and determining relational boundaries (Buss 2000; Guerrero, 1998). However, experiences of frequent or extreme jealousy, or jealousy in response to imagined situations has been connected to negative outcomes (Mullen & Martin,

1994). Understanding the dynamics and types of jealousy experienced by partners in romantic relationships is important for the purposes of this study and understanding how attachment predicts rates of jealousy and its impact on the couple relationship.

One conceptualization of how jealousy occurs asserts that it is a linear process, which begins when an individual has cognitively determined that a threat is present. Once the individual has cognitively evaluated the presence of a threat, they experience emotional cues that lead to a behavioral coping strategy (White, 1981). In contrast to White's (1981) model of jealousy, the parallel interactive model claims that the feelings, thoughts, and actions that create the experience of jealousy occur simultaneously with one another and interact (Pheiffer & Wong, 1989).

The parallel interactive model distinguishes between three classifications of jealousy, including emotional jealousy, cognitive jealousy, and behavioral jealousy (Pheiffer, & Wong, 1989). Emotional jealousy includes "the anticipated affective responses to threats", cognitive jealousy includes "suspicions, thoughts, and worries about a partner's extradyadic behaviors," and behavioral jealousy involves "checking/snooping behaviors" exhibited by the individual (Dandurand, & Lafontaine, 2014, p. 156). Pheiffer and Wong's typology are similar to the types of jealousy described by Buunck (1991, 1997), which includes reactive jealousy, anxious jealousy, and possessive jealousy.

Similar to emotional jealousy, reactive jealousy refers to the emotional reactions that are felt in response to an actual threat to the relationship. Anxious jealousy is linked to the cognitive processes related to jealousy and includes rumination about the infidelity. Lastly, possessive jealousy refers to the behavioral element of jealousy, such as monitoring or controlling behaviors (Utz & Beukeboom, 2011). While reactive jealousy is in response to a real threat, anxious

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jealousy and possessive jealousy can occur without the presence of a true threat to the relationship. Reactive jealousy has been found to have a positive relation to relationship quality, potentially because it indicates caring for the partner. However, anxious jealousy has a negative impact on relationship quality, potentially because it is frequently ungrounded and causes relationship distress. Possessive jealousy was the only category that was found to be unrelated to relationship quality.

Jealousy, similarly to attachment orientation, can be considered methods of decreasing threats to one's attachment bond and maintaining relationships (Sharpsteen, & Kirkpatrick, 1997). Marazitti et al. (2010) suggest that jealousy in romantic relationships and attachment share some common features, such as focusing on maintaining the relationship, being triggered by separation, involving the same basic emotions, and eliciting a sense of safety when the other is responsive. During childhood parents usually serve as the primary attachment figure in a child's life, while as adults this attachment figure role is usually transferred to another adult, such as a romantic partner. Availability of romantic or sexual partners is usually connected to a sense of exclusivity within the relationship, previous literature has suggested that the potential of abandonment or fear of losing that exclusivity with their partner can trigger romantic jealousy in relationships (Sharpsteen & Kirkpatrick, 1997). Previous findings have indicated that an individual's attachment style can influence the frequency of which they experience jealousy, and the patterns of jealousy they display (Marazitti et al., 2010).

A previous research study on the role of attachment as a moderating factor between jealousy and couple's satisfaction confirmed that romantic attachment moderated the link between jealousy and couple's satisfaction (Dandurand & Lafontaine, 2014). Findings indicated that cognitive jealousy accounted for the greatest amount of variance in couple satisfaction,

regardless of the sequence of each aspect of jealousy as proposed by White's (1981) model. The addition of behavioral jealousy, after accounting for cognitive jealousy, did not significantly impact the value of couple satisfaction. Finally, couple satisfaction increased incrementally with the added consideration of emotional jealousy, demonstrating a positive relationship between the two (Dandurand, & Lafontaine, 2014). However, other research has indicated that higher frequencies of emotional jealousy negatively impacted couple satisfaction (Anderson, Eloy, Guerrero, & Spitzberg, 1995). Dandurand and Lafontaine hypothesize that anticipated reactions to threats might be positively related to relationship satisfaction, similar to their findings, but frequent reactions to imagined or recurrent jealousy-evoking situations would be less favorable for relationship satisfaction.

Regarding anxiously attached individuals, being the subject of cognitive jealousy from their partner was related to a greater decrease in the couple's satisfaction. However, the same was not true if the participant was the one reporting experiencing cognitive jealousy towards their partner. The researchers theorized that this finding may be due to anxiously attached individuals already having a propensity for cognitive jealousy regardless of whether or not a threat to the relationship was present. Participants who demonstrated high levels of attachment anxiety showed a stronger negative relationship between their own experiences of behavioral jealousy and couple satisfaction, and a positive relation between emotional jealousy and couple satisfaction. Similar to cognitive jealousy, a moderation effect was not found between the perception of their partner's emotional jealousy and couple satisfaction (Dandurand & Lafontaine, 2014).

In contrast to the diverse relationships found between attachment anxiety and the types of jealousy, findings indicated that there was not a moderation effect for one's own or one's

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partner's cognitive or emotional jealousy among participants who exhibited attachment avoidance. The lack of moderation effects found may indicate that high attachment avoidance generally results in similar levels of distress across different jealousy events, despite individuals with attachment avoidance attempting to employ avoidant defense mechanisms and denying the importance of threatening events. Additionally, there was no interaction found between the participants' own experiences of behavioral jealousy, but there was a significant interaction between the perception of their partner's behavioral jealousy and attachment avoidance (Dandurand & Lafontaine, 2014). These findings were supported by previous research that demonstrated that avoidant people tend to disregard their partner's expression of attachment needs (Mikulincer & Shaver, 2007).

Conclusion

Considering the current literature that is available, it is evident that attachment plays an integral role in individual and relational outcomes throughout life and that technology is becoming an increasingly prominent fixture in romantic relationship formation and maintenance. Additionally, it has been established that attachment and technology use influence experiences of jealousy and relationship satisfaction, but it is still unclear how all of these factors interact in emerging adult relationships. The current study aims to provide insight into how attachment influences technology use of emerging adults, and experiences of jealousy and relationship quality.

CHAPTER 3: METHODOLOGY

As described in the literature review, attachment orientation appears to have an effect on the typical patterns of technology use demonstrated by emerging adults, and their experiences of jealousy and satisfaction in romantic relationships. The research questions were based on previous research that has explored the link between these variables. Technology use has been linked to higher rates of jealousy in relationships, and attachment orientation appears to influence the rates of jealousy and technology use exhibited (Lucero et al., 2014; Marshall, Bejanyan, Castro, & Lee, 2013; Bevan, 2013). Despite the potential damaging effect of jealousy on relationships, attachment orientation has been found to serve a moderating role between jealousy and attachment (Dandurand & Lafontaine, 2014).

To address the research questions being examined in the current study, a previously collected dataset was utilized that had been collected through an online survey of an emerging adult sample. The current study aims to address the relationship between attachment orientation, technology use, technology use with romantic partner, jealousy, and relationship satisfaction in emerging adult relationships. As a critical stage of personal and relational development, it is important to understand how the extreme prevalence of technology use in our daily lives is affecting the relationships of emerging adults. Additionally, understanding attachment's role as a potential predictive factor of technology use and relationship outcomes may provide helpful insight for clinicians and other professionals working with adolescent and emerging adult populations. An ex post facto research design was used to compare emerging adults with secure attachment orientations, to others with an insecure attachment orientation.

Purpose of the Study

The purpose of the current study is to examine the impact of technology on the romantic relationships of emerging adults through the lens of attachment theory. The study aims to

investigate the association between emerging adults' attachment orientation, patterns of technology use, and experiences of jealousy and sense of satisfaction within their romantic relationships. Research questions being considered in the current study include: 1) Does attachment orientation predict the frequency of emerging adults' typical patterns of technology use, and technology use with their partner? 2) In what ways do technology and the attachment orientation of an emerging adult predict their reported experiences of jealousy with their partner? 3) What is the relationship between emerging adults' attachment orientation, technology use, experiences of jealousy in their relationship, and their relationship satisfaction? Hypotheses of each of the research questions include the following:

H1: Participants with secure attachment orientations are anticipated to report less technology use than participants who demonstrate insecure attachment.

H2: Securely attached participants are predicted to report less jealousy in their romantic relationship, whereas participants demonstrating insecure attachment are expected to experience greater rates of jealousy.

H3: Participants with secure attachment and less jealousy are expected to report greater relationship satisfaction. The increased use of technology and rates of jealousy projected to be demonstrated by insecurely attached participants are expected to negatively impact their overall relationship satisfaction.

Participants

The study sample included 614 total participants. The participants were primarily recruited from entry level Psychology courses at East Carolina University. As the data was collected from college students, the participants were likely to fit Arnett's (2000) description of emerging adults as previously described. The sample included participants from various

backgrounds, and no participants were excluded based upon demographic information. The demographic information indicated that 71.4% % of the participants identified as female, while 28.6% identified as male. The majority of participants (93.2%) identified as heterosexual. The average age of participants was 20.94 years of age, and the majority (95.2%) of the sample was from North Carolina. The racial demographics of the sample were 62.4% white, 24.4% African American, 5.3% Hispanic or Latino, 2.3% Asian, 1.1% Pacific Islander, 2.3% American Indian or Alaskan Native, and 2.3% other. In response to which devices they own or use frequently, the participants reported the following: 40.2% cell phone, 85.3% smart phone, 35.3% iPad or tablet, and 84.2% laptop.

Summary of Inclusion and Exclusion Criteria The sample primarily included participants who fit the description of emerging adulthood due to recruitment being held at East Carolina University. Additional participants were recruited outside of the university, resulting in a more diverse age range of participants. Age and gender will be controlled for in the analyses to account for differences in age groups. The sample included participants from any culture, race, religion, socioeconomic status, sexual orientation, or other background.

Procedures

Convenience sampling and random sampling were used during this study to find a sample that fit the inclusion criteria. Participants were recruited primarily from East Carolina University, through required general education undergraduate entry level Psychology courses. Participants were invited to take part in an online survey, which included an informed consent document which participants had to consent to before they could begin the survey. The informed consent document explained the purpose of the study, as well as the potential risks and benefits of participating in the study. Facebook invitations and mass emails were also used to recruit

additional participants who were enrolled at different universities, or were not currently students. The links provided through Facebook or by email detailed the purpose of the study and the participation qualifications. Additionally, the links directed the participant to the online link to sign the informed consent document and complete the survey. The sampling process was offered during a Fall and Spring semester and ended approximately two weeks after the semester began. Recruitment continued until at least 100 participants had finished the survey.

The informed consent document included the purpose of the study and the methods that were employed to collect and analyze the data. The document explained the details of participants' confidentiality, and the principal investigator's contact information if participants needed additional information. The researchers used online secure Qualtrics (2014) software that did not connect the participant's identifying information with their survey response to ensure participants' identities and interactions remained confidential. To further maintain confidentiality, data was securely stored on the East Carolina University premises and was only accessible to approved researchers. In addition, the consent form stated that the study obtained IRB approval, and explained the possible risks and benefits of participating in the study. Possible benefits included extra credit for completing the survey, and a feeling of helpfulness for contributing to knowledge about the impact of technology on romantic relationships. The possible risks did not differ from the typical risks of everyday living. Participants were informed that participation in the study was voluntary, and that they could discontinue at any time. The study included one survey that required about half an hour to complete and could be completed at the participant's convenience any time during the response period, which continued for approximately two weeks during the Fall and Spring semester when the survey was offered.

Measures

As described previously, the purpose of the current study is to investigate the relationship between attachment orientation, technology use, jealousy, and relationship satisfaction during emerging adulthood. To explore this topic, three research questions are being examined through the current study including: 1) Does emerging adults' attachment orientation predict their daily patterns of technology use, and technology use with their romantic partners? 2) How does technology and attachment relate to experiences of jealousy in emerging adults' romantic relationships? 3) What is the association between attachment, technology use, experiences of jealousy, and relationship satisfaction during emerging adulthood?

Technology use was evaluated using several items developed by the researchers for the purposes of the current study. The first scale included eight items assessing the frequency participants' used different types of technology. The Technology Type Scale was measured on a five-point Likert scale, ranging from "never" (1) to "very frequently" (5). The Technology Type Scale demonstrated high reliability based on the Cronbach's alpha that was found for the scale (α = .73). Another scale was designed to assess the frequency of communication with romantic partners using eight different types of technology, and demonstrated high reliability (α = .79). The Technology Type with Romantic Partner Scale was measured on a six-point scale, ranging from "never" to "more than 10 times a day."

Experiences in Close Relationships (ECR). The Experiences in Close Relationships was used to measure the attachment orientation of the participants in the study. The ECR is a self-report scale including thirty-six total items, consisting of two subscales that each include 18-items. The participants rate the items based on a seven-point Likert scale, ranging from "1" indicating strongly disagree, to "7" indicating strongly agree (Brennan, Clark, & Shaver, 1998). Together the Cronbach's alpha scores for the avoidance (α = .94) and anxiety (α = .91) subscales

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demonstrate high reliability of the ECR. Additionally, the measures lack significant correlation (r = .11) indicating that the subscales are evaluating two distinct dimensions of attachment (Brennan et al., 1998).

Relationship Assessment Scale (RAS). The Relationship Assessment Scale was originally developed and utilized in the current study to assess overall relationship satisfaction. The RAS includes seven items which are rated on a five-point Likert scale, ranging from (1) low satisfaction to (5) high satisfaction (Hendrick, 1988). Based on the design of the assessment, greater overall scores are indicative of the individual being more satisfied within their relationship. The first three items include: "How well does your partner meet your needs?" "In general, how satisfied are you with your relationship?" and "How good is your relationship compared to most?" The RAS has a high reported Cronbach's alpha coefficient (α = .86), indicating strong internal consistency (Hendrick, 1988).

Facebook Jealousy Scale. The Facebook Jealousy Scale was designed to assess people's experiences of jealousy surrounding Facebook. The original scale consists of 27-items that are measured on a seven-point Likert scale, ranging from (1) very unlikely to (7) very likely. The original Facebook Jealousy Scale demonstrated high reliability, with a Cronbach's alpha coefficient of .96 (Muise, Christofides, Desmarais, 2009). For the purposes of the current study an adapted version of the scale was used, which included fourteen of the items based on the Facebook Jealousy Scale. Examples of the items integrated into the scale include: "Become jealous if your partner sends pictures/makes walls posts of him/herself that are sexually provocative?" "Become jealous if your partner private messaged an unknown member of the opposite sex?" and "Become jealous if your partner private messaged a mutual friend of the opposite sex?" Some questions were also adapted to include Snapchat activity, such as: "Worry

that you partner is using Snapchat/Facebook to initiate relationships with members of the opposite sex?"

Analysis

The researchers completed a quantitative analysis of the data collected during the study, and analyze the data using SPSS software. Tables and figures were created and provided to demonstrate the findings of the data analyses. A hierarchical multiple regression was completed for each of the research questions. The first research question was examined using two models including age, gender and attachment style, with technology use, and technology use with romantic partner as the two dependent variables. The model used for the second research question included gender, age, attachment, technology use, and technology use with romantic partner, to assess whether they are predictive of jealousy as the dependent variable. The final model included all of the aforementioned variables, with relationship satisfaction as the final dependent variable.

CHAPTER 4: REFERENCES

Ahlstrom, M., Lundberg, N. R., Zabriskie, R., Eggett, D., & Lindsay, G. B. (2012). Me, my spouse, and my avatar: The relationship between marital satisfaction and playing massively multiplayer online role-playing games. *Journal of Leisure Research,* 44(1), 1.

Ainsworth, M. D. S. (1978). *Patterns of attachment: A psychological study of the strange situation.* New York; Hillsdale, NJ: Lawrence Erlbaum Associates.

Andersen, P. A., Eloy, S. V., Guerrero, L. K., & Spitzberg, B. H. (1995). Romantic jealousy and relational satisfaction: A look at the impact of jealousy experience and expression. *Communication Reports*, *8*(2), 77-85. doi:10.1080/08934219509367613

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, *55*(5), 469-480. doi:10.1037/0003-066X.55.5.469

Arnett, J. J. (2004). *Emerging adulthood: The winding road from the late teens through the twenties.* Oxford, NY: Oxford University Press.

Arnett, J. J. (2007). Emerging adulthood: What is it, and what is it good for? *Child Development Perspectives*, *1*(2), 68-73. doi:10.1111/j.1750-8606.2007.00016.x

Baker, C. K., & Carreño, P. K. (2016). Understanding the role of technology in adolescent dating and dating violence. *Journal of Child and Family Studies*, *25*(1), 308-320. doi:10.1007/s10826-015-0196-5

Barelds, D. P. H., & Barelds-Dijkstra, P. (2007). Relations between different types of jealousy and self and partner perceptions of relationship quality. *Clinical Psychology & Psychotherapy, 14*(3), 176-188. doi:10.1002/cpp.532

Bargh, J. A., & McKenna, K. Y. A. (2004). The internet and social life. *Annual Review of Psychology, 55*(1), 573-590. doi:10.1146/annurev.psych.55.090902.141922

Bargh, J. A., McKenna, K. Y. A., & Fitzsimons, G. M. (2002). Can you see the real me? activation and expression of the "True self" on the internet. *Journal of Social Issues, 58*(1), 33-48. doi:10.1111/1540-4560.00247

Bernhard, K. F. (1986). *Jealousy: Its nature and treatment.* J. E. Bernhard (Ed.). Charles C Thomas Pub Ltd.

Bevan, J. L. (2008). Experiencing and communicating romantic jealousy: Questioning the investment model. *Southern Communication Journal, 73*(1), 42-67. doi:10.1080/10417940701815626

Bevan, J. L. (2013). *The communication of jealousy*. New York, NY: Peter Lang.

Bonebrake, K. (2002). College students' internet use, relationship formation, and personality correlates. *CyberPsychology & Behavior, 5*(6), 551-557. doi:10.1089/109493102321018196

Bookwala, J. (2005). The role of marital quality in physical health during the mature years. *Journal of Aging and Health, 17*(1), 85-104. doi:10.1177/0898264304272794

Bouchey, H. A., & Furman, W. (2003). Dating and Romantic Experiences in Adolescence. In G. R. Adams & M. D. Berzonsky (Eds.), *Blackwell Handbook of Adolescence* (pp. 312-329). Malden, MA: Blackwell Publishing.

Bowlby, J. (1969). *Attachment and loss: Attachment* (Vol. 1). New York, NY: Basic Books.

Bowlby, J. (1973). *Attachment and loss: Separation* (Vol. 2). New York, NY: Basic Books.

Bowlby, J. (1977). The making and breaking of affectional bonds. *The British Journal of Psychiatry, 130*(3), 201-210. doi:10.1192/bjp.130.3.201

Boyd, D. (2006). Friends, friendsters, and myspace top 8: Writing community into being on social network sites. *First Monday, 11*(12).

Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult

    attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.),

    Attachment theory and close relationships (pp. 46-76). New York, NY: Guilford Press.

Bringle, R. G., & Buunk, B. P. (1991). Extradyadic relationships and sexual jealousy. In K.

    McKinney & S. Sprecher (Eds.), *Sexuality in close relationships* (pp. 135-153). Hillsdale,

    N.J: L. Erlbaum Associates.

Brown, J. D. (2006). Emerging adults in a media-saturated world. In J. J. Arnett & J. L. Tanner

    (Eds.), *Emerging adults in America: Coming of age in the 21st century* (pp. 279–

    299). Washington, DC: American Psychological Association.

Buote, V. M., Wood, E., & Pratt, M. (2009). Exploring similarities and differences between

    online and offline friendships: The role of attachment style. *Computers in Human*

    Behavior, 25(2), 560-567. doi:10.1016/j.chb.2008.12.022

Burdette, A. M., Hill, T. D., Ellison, C. G., & Glenn, N. D. (2009). "hooking up" at college:

    Does religion make a difference? *Journal for the Scientific Study of Religion, 48*(3), 535-

    551. doi:10.1111/j.1468-5906.2009.01464.x

Buss, D. (2000). *The dangerous passion: Why jealousy is as necessary as love & sex.* Toronto,

    Ont: The Globe & Mail division of Bell Globemedia Publishing Inc.

Buunk, B. P. (1997). Personality, birth order and attachment styles as related to various types of

    jealousy. *Personality and Individual Differences, 23*(6), 997-1006. doi:10.1016/S0191-

    8869(97)00136-0

Buunk, B., & Bringle, R. G. (1987). Jealousy in love relationships. In D. Perlman & S. Duck

    (Eds.), *Intimate relationships: Development, dynamics, and deterioration* (pp. 123-147).

    Thousand Oaks, CA: Sage Publications.

Carson, C. L., & Cupach, W. R. (2000). Fueling the flames of the green-eyed monster: The role of ruminative thought in reaction to romantic jealousy. *Western Journal of Communication, 64*(3), 308-329. doi:10.1080/10570310009374678

Centers for Disease Control and Prevention. (2014). Teen Dating Violence. http://www.cdc.gov/violenceprevention/pdf/teen-dating-violence-2014-a.pdf

Chopik, W. J., & Peterson, C. (2014). Changes in technology use and adult attachment orientation from 2002 to 2012. *Computers in Human Behavior, 38*, 208-212. doi:10.1016/j.chb.2014.05.031

Coyne, S. M., Busby, D., Bushman, B. J., Gentile, D. A., Ridge, R., & Stockdale, L. (2012). Gaming in the game of love: Effects of video games on conflict in couples. *Family Relations, 61*(3), 388-396. doi:10.1111/j.1741-3729.2012.00712.x

Coyne, S. M., Stockdale, L., Busby, D., Iverson, B., & Grant, D. M. (2011). "I luv u:)!": A descriptive study of the media use of individuals in romantic relationships. *Family Relations, 60*(2), 150-162. doi:10.1111/j.1741-3729.2010.00639.x

Creasey, G., & Hesson-McInnis, M. (2001). Affective responses, cognitive appraisals, and conflict tactics in late adolescent romantic relationships: Associations with attachment orientations. *Journal of Counseling Psychology, 48*(1), 85-96. doi:10.1037/0022-0167.48.1.85

Dandurand, C., & Lafontaine, M. F. (2013). Intimacy and couple satisfaction: The moderating role of romantic attachment. *International Journal of Psychological Studies*, *5*(1), 74.

Draucker, C. B., & Martsolf, D. S. (2010). The role of electronic communication technology in adolescent dating violence. *Journal of Child and Adolescent Psychiatric Nursing :*

Official Publication of the Association of Child and Adolescent Psychiatric Nurses, Inc,
23(3), 133-142. doi:10.1111/j.1744-6171.2010.00235.x

Duggan, M., & Brenner, J. (2013). *The demographics of social media users- 2012, 14.*
Washington, DC: Pew Research Center's Internet & American Life Project.

Dush, C. M. K., & Amato, P. R. (2005). Consequences of relationship status and quality for
subjective well-being. *Journal of Social and Personal Relationships, 22*(5), 607-627.
doi:10.1177/0265407505056438

Eberhart, N. K., Auerbach, R. P., Bigda-Peyton, J., & Abela, J. R. Z. (2011). Maladaptive
schemas and depression: Tests of stress generation and diathesis-stress models. *Journal
of Social and Clinical Psychology, 30*(1), 75-104. doi:10.1521/jscp.2011.30.1.75

Erikson, E. H. (1968). *Identity: Youth and crisis.* Oxford, England: Norton & Co.

Feeney, J. A. (1999). Adult romantic attachment and couple relationships. In J. Cassidy & P.
Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp.
355-377). New York, NY: Guilford Press.

Feeney, J. A., & Noller, P. (1991). Attachment style and verbal descriptions of romantic partners.
Journal of Social and Personal Relationships, 8(2), 187-215.
doi:10.1177/0265407591082003

Fraley, R. C., & Shaver, P. R. (2000). Adult romantic attachment: Theoretical developments,
emerging controversies, and unanswered questions. *Review of General Psychology, 4*(2),
132-154. doi:10.1037/1089-2680.4.2.132

Gala, J., & Kapadia, S. (2013). Romantic relationships in emerging adulthood: A developmental
perspective. *Psychological Studies, 58*(4), 406-418. doi:10.1007/s12646-013-0219-5

Goodman-Deane, J., Mieczakowski, A., Johnson, D., Goldhaber, T., & Clarkson, P. J. (2016).

> The impact of communication technologies on life and relationship satisfaction.

> *Computers in Human Behavior, 57*, 219-229. doi:10.1016/j.chb.2015.11.053

Gottman, J. M., & Levenson, R. W. (1992). Marital processes predictive of later dissolution:

> Behavior, physiology, and health. *Journal of Personality and Social Psychology, 63*(2),

> 221-233. doi:10.1037/0022-3514.63.2.221

Guarnieri, S., Smorti, M., & Tani, F. (2015). Attachment relationships and life satisfaction

> during emerging adulthood. *Social Indicators Research, 121*(3), 833-847.

> doi:10.1007/s11205-014-0655-1

Guerrero, L. K. (1998). Attachment-style differences in the experience and expression of

> romantic jealousy. *Personal Relationships, 5*(3), 273-291. doi:10.1111/j.1475-

> 6811.1998.tb00172.x

Hargittai, E., & Hinnant, A. (2008). Digital inequality: Differences in young adults' use of the

> internet. *Communication Research, 35*(5), 602-621. doi:10.1177/0093650208321782

Hazan, C., & Shaver, P. R. (1994). Attachment as an organizational framework for research on

> close relationships. *Psychological Inquiry, 5*(1), 1-22. doi:10.1207/s15327965pli0501_1

Hendrick, S. S., Dicke, A., & Hendrick, C. (1998). The relationship assessment scale. *Journal of*

> *Social and Personal Relationships, 15*(1), 137-142. doi:10.1177/0265407598151009

Holman, T. B., Galbraith, R. C., Mead Timmons, N., Steed, A., & Tobler, S. B. (2009). Threats

> to parental and romantic attachment figures' availability and adult attachment insecurity.

> *Journal of Family Issues, 30*(3), 413-429. doi:10.1177/0192513X08325013

International Telecommunication Union (2014). Mobile cellular subscriptions (per 100 people). *World telecommunication/ICT development report and database.* Retrieved from http://data.worldbank.org/indicator/IT.CEL.SETS.P2

Jin, B. (2007, November). Mobile communication as a mode of interpersonal communication. In *National Communication Association Convention, Chicago.*

Joinson, A. N. (2001). Self-disclosure in computer-mediated communication: The role of self-awareness and visual anonymity. *European Journal of Social Psychology, 31*(2), 177-192. doi:10.1002/ejsp.36

Karre, J. K. (2015). Fathering behavior and emerging adult romantic relationship quality: Individual and constellations of behavior. *Journal of Adult Development, 22*(3), 148-158. doi:10.1007/s10804-015-9208-3

Katz, J. E., & Aakhus, M. (2002). *Perpetual contact: Mobile communication, private talk, public performance*. Cambridge University Press.

Knobloch, L. K., Solomon, D. H., & Cruz, M. G. (2001). The role of relationship development and attachment in the experience of romantic jealousy. *Personal Relationships, 8*(2), 205-224. doi:10.1111/j.1475-6811.2001.tb00036.x

Kobak, R. (1999). The emotional dynamics of disruptions in attachment relationships: Implications for theory, research, and clinical intervention. In J. Cassidy & P. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 21-43). New York, NY: Guilford Press.

Konrath, S.H. (2012). The empathy paradox: Increasing disconnection in the age of increasing connection. In R. Luppicini (Ed.), *Handbook of research on technoself: Identity in a technological society* (pp. 204-228). IGI Global.

Kumar, S. A., & Mattanah, J. F. (2016). Parental attachment, romantic competence, relationship satisfaction, and psychosocial adjustment in emerging adulthood: Attachment, romance, and adjustment. *Personal Relationships, 23*(4), 801-817. doi:10.1111/pere.12161

Laumann, E. O., Gagnon, J. H., Michael, R. T., & Michaels, S. (1995). *National health and social life survey*. Chicago, IL: University of Chicago and National Opinion Research Center.

Levy, K. N., & Kelly, K. M. (2010). Sex differences in jealousy: A contribution from attachment theory. *Psychological Science, 21*(2), 168-173. doi:10.1177/0956797609357708

Levy, K. N., Kelly, K. M., & Jack, E. L. (2006). Sex Differences in Jealousy: A Matter of Evolution or Attachment History?. In M. Mikulincer & G. Goodman (Eds.), *Dynamics of romantic love: Attachment, caregiving, and sex* (pp. 128-145). New York, NY: Guilford Press.

Licoppe, C. (2004). 'Connected' presence: the emergence of a new repertoire for managing social relationships in a changing communication technoscape. *Environment and planning D: Society and space*, *22*(1), 135-156. doi: 10.1068/d323t.

Lucero, J. L., Weisz, A. N., Smith-Darden, J., & Lucero, S. M. (2014). Exploring gender differences: Socially interactive technology Use/Abuse among dating teens. *Affilia, 29*(4), 478-491. doi:10.1177/0886109914522627

Madden, M., & Lenhart, A. (2006). *Online dating: Americans who are seeking romance use the Internet to help them in their search, but there is still widespread public concern about the safety of online dating*. Pew Internet & American Life Project.

Madden, M., Lenhart, A., Cortesi, S., Gasser, U., Duggan, M., Smith, A., & Beaton, M. (2013). *Teens, social media, and privacy.* Pew Research Center.

Madell, D. E., & Muncer, S. J. (2007). Control over social interactions: An important reason for young people's use of the internet and mobile phones for communication? *CyberPsychology & Behavior, 10*(1), 137-140. doi:10.1089/cpb.2006.9980

Madsen, S. D., & Collins, W. A. (2011). The salience of adolescent romantic experiences for romantic relationship qualities in young adulthood. *Journal of Research on Adolescence, 21*(4), 789-801. doi:10.1111/j.1532-7795.2011.00737.x

Marazziti, D., Consoli, G., Albanese, F., Laquidara, E., Baroni, S., & Dell'Osso, M. C. (2010). Romantic attachment and subtypes/dimensions of jealousy. *Clinical Practice and Epidemiology in Mental Health, 6*(1), 53-58. doi:10.2174/17450179010060100053

Marshall, T. C., Bejanyan, K., Di Castro, G., & Lee, R. A. (2013). Attachment styles as predictors of Facebook-related jealousy and surveillance in romantic relationships. *Personal Relationships, 20*(1), 1-22. doi:10.1111/j.1475-6811.2011.01393.x

McKenna, K. Y. (2007). A progressive affair: Online dating to real world mating. In M. Whitty, A. Baker, & J. Inman (Eds.), *Online matchmaking* (pp. 112-124). New York, NY: Palgrave Macmillan.

McKenna, K. Y. (2008). MySpace or your place: Relationship initiation and development in the wired and wireless world. In S. Sprecher, A. Wenzel, & J. H. Harvey, J. H. (Eds.), *Handbook of relationship initiation* (pp. 235-247). New York: Psychology Press.

McKenna, K. Y. A., Green, A. S., & Gleason, M. E. J. (2002). Relationship formation on the internet: What's the big attraction? *Journal of Social Issues, 58*(1), 9-31. doi:10.1111/1540-4560.00246

Mikulincer, M., & Shaver, P. R. (2007). *Attachment in adulthood: Structure, dynamics, and change*. New York: Guilford Press.

Muise, A., Christofides, E., & Desmarais, S. (2009). More information than you ever wanted: Does facebook bring out the green-eyed monster of jealousy? *CyberPsychology & Behavior, 12*(4), 441-444. doi:10.1089/cpb.2008.0263

Mullen, P., & Martin, J. (1994). Jealousy: A community study. *The British Journal of Psychiatry, 164*(1), 35-43. doi:10.1192/bjp.164.1.35

Pallant, J. (2013). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS* (5th ed.). Maidenhead, Berkshire, England: McGraw Hill.

Pettigrew, J. (2009). Text messaging and connectedness within close interpersonal relationships. *Marriage & Family Review, 45*(6-8), 697-716. doi:10.1080/01494920903224269

Pew Internet and American Life Project . (2010). Washington , DC : Pew Research Center . Retrieved from http://www.pewinternet.org/2010/12/16/generations-2010/

Pfeiffer, S. M., & Wong, P. T. (1989). Multidimensional jealousy. *Journal of Social and Personal Relationships*, *6*(2), 181-196. doi:10.1177/026540758900600203

Prensky, M. (2001). Digital natives, digital immigrants part 1. *On the Horizon, 9*(5), 1-6. doi:10.1108/10748120110424816

Puente, S., & Cohen, D. (2003). Jealousy and the meaning (or nonmeaning) of violence. *Personality and Social Psychology Bulletin, 29*(4), 449-460. doi:10.1177/0146167202250912

Qualtrics (2014). Qualtrics [Software]. Provo, UT.

Rabby, M. K., & Walther, J. B. (2003). Computer-mediated communication effects on relationship formation and maintenance. In D. J. Canary & M. Dainton (Eds.), *Maintaining relationships through communication: Relational, contextual, and cultural variations* (pp. 141-162). Mahwah, N.J.: Routledge.

Ruppel, E. K. (2015). Use of communication technologies in romantic relationships: Self-

  disclosure and the role of relationship development. *Journal of Social and Personal*

  Relationships, 32(5), 667-686. doi:10.1177/0265407514541075

Schade, L. C., Sandberg, J., Bean, R., Busby, D., & Coyne, S. (2013). Using technology to

  connect in romantic relationships: Effects on attachment, relationship satisfaction, and

  stability in emerging adults. *Journal of Couple and Relationship Therapy, 12*(4), 314-

  338. doi:10.1080/15332691.2013.836051

Sharpsteen, D. J., & Kirkpatrick, L. A. (1997). Romantic jealousy and adult romantic attachment.

  Journal of Personality and Social Psychology, 72(3), 627-640. doi:10.1037/0022-

  3514.72.3.627

Shulman, S., Kalnitzki, E., & Shahar, G. (2009). Meeting developmental challenges during

  emerging adulthood: The role of personality and social resources. *Journal of Adolescent*

  Research, 24(2), 242-267. doi:10.1177/0743558408329303

Sidelinger, R. J., Ayash, G., Godorhazy, A., & Tibbles, D. (2008). Couples go online: Relational

  maintenance behaviors and relational characteristics use in dating relationships. *Human*

  Communication, *11*(3)*,* 341–355.

Smith, A., & Duggan, M. (2013). Online dating & relationships. *Pew Internet & American Life*

  Project.

Snyder, A. R. (2006). Risky and casual sexual relationships among teens. In A. Booth, A.

  Crouter, & A. Snyder (Eds.), *Romance and sex in adolescence and emerging adulthood:*

  Risks and opportunities (pp. 161-169). New York, NY: Routledge.

Sprecher, S. (2009). Relationship initiation and formation on the internet. *Marriage & Family*

  Review, 45(6-8), 761-782. doi:10.1080/01494920903224350

Stern, S. R., & Willis, T. J. (2007). What are teenagers up to online? In S. R. Mazzarella (Ed.),

    20 questions about youth and the media (pp. 211-224). New York, NY: Peter Lang

    Publishing.

Student Affairs Administrators in Higher Education . (2008). *Profile of today's college student*[Data

    file]. Retrieved from http://www.naspa.org/2008%20technology%20use.pdf

Utz, S., & Beukeboom, C. J. (2011). The role of social network sites in romantic relationships:

    Effects on jealousy and relationship happiness. *Journal of Computer-Mediated*

    Communication, 16(4), 511-527. doi:10.1111/j.1083-6101.2011.01552.x

Walker, K., Krehbiel, M., & Knoyer, L. (2009). "Hey you! just stopping by to say hi!":

    Communicating with friends and family on MySpace. *Marriage & Family Review, 45*(6-

    8), 677-696. doi:10.1080/01494920903224251

Webster, T. (2010, April 8). *The infinite dial 2010: Use of social media explodes.* Retrieved from

    http://www.edisonresearch.com/the_infinite_dial_2010_use_of_social_media_explodes/

White, G. L. (1981). A model of romantic jealousy. *Motivation and Emotion, 5*(4), 295-310.

    doi:10.1007/BF00992549

Whitney, L. (2010). *Twitter, Facebook use up 82 percent.* Cnet news Online.

Williams, R., & Edge, D. (1996). The social shaping of technology. *Research Policy, 25*(6), 865-

    899. doi:10.1016/0048-7333(96)00885-2

CHAPTER 5: MANUSCRIPT

Technology has become a fundamental part of life, and presents unique benefits and challenges for people today compared to the experiences of previous generations. Technology has altered the communication and interaction patterns of individuals, particularly among emerging adults and other "digital natives" who are more familiar with using technology to communicate in their interpersonal relationships (Prensky, 2001). Previous research findings have indicated that patterns of technology use, jealousy and attachment all impact couple satisfaction, however research exploring how these factors interact to influence satisfaction is still limited (Feeney, 1999; Pheiffer & Wong, 1989; Dandurand & Lafontaine, 2013). The purpose of the current study is to evaluate the relationship between attachment orientation, technology use, technology use with one's romantic partner, jealousy, and relationship satisfaction among a sample including emerging adults in relationships.

Literature Review

Communication technologies, such as email, social networking sites and texting, are innately social and therefore expected to affect interpersonal relationships (Goodman-Deane, Mieczakowski, Johnson, Goldhaber, Clarkson, 2016). Communication technologies are used at astonishing rates, especially among emerging adults. For instance, emerging adults are the heaviest daily internet users compared to other age groups (Pew Research Center, 2010, 2013). Additionally, cellphones are having a significant influence on the interpersonal relationships among this group as text messaging has become a primary form of communication technology used by emerging adults (Student Affairs Administrators in Higher Education, 2008). Previous research demonstrates that emerging adults are living out their relationships through technology-based mediums in new ways (Smith & Duggan, 2013). Understanding emerging adults'

motivations for using technology and its consequences is an important area for research as technology has been shown to affect couple satisfaction (Coyne et al., 2012).

Theoretical Orientation: Attachment Theory

Attachment theory provides a valuable perspective of emerging adult relationships, and was used as the theoretical foundation of the current study. According to attachment theorists, children develop an attachment style based on their early interactions with their primary caregivers. The early interactions between children and caregivers form templates, referred to as internal working models, which influence how individuals approach relationships in the future (Hazan & Shaver, 1987; Bowlby, 1973). Internal working models shape people's expectations of themselves and others, depending on whether they deem the attachment figure to be responsive and themselves as someone likely to garner a response from the attachment figure (Bowlby, 1973). When a child's caregiver is responsive and reassuring they are able to develop appropriate regulatory strategies, leading to a secure attachment style. In contrast to secure attachment, those who do not receive positive and responsive caretaking are likely to develop an insecure attachment style, which is commonly categorized as either anxious attachment or avoidant attachment (Bowlby, 1969, 1979).

Attachment Styles. As mentioned above, attachment is largely distinguished as either secure or insecure, with insecure attachment being further classified as either anxious attachment or avoidant attachment. Children who experienced unpredictable and inconsistent patterns of responsiveness from their caregivers are likely to exhibit an anxious attachment style. In childhood, this can manifest as hypervigilance towards the caregiver, and difficulty developing a sense of security and trust (Bowlby, 1979). As adults, anxious attachment styles can lead to individuals having difficulty achieving a desired level of intimacy in their romantic relationships,

despite craving intimacy with their partners (Feeney & Knoller, 1991). Experiences of love for anxious partners are usually marked by obsessive preoccupation, a strong desire for responsiveness and unity, emotional highs and lows, and extreme attraction and jealousy (Hazan & Shaver, 1987).

While anxious attachment stems from unpredictable caregiver responsiveness, avoidant attachment typically is the result of maladaptive responses to children's needs, such as rejection or dismissal of child's pleads for care. Patterns of maladaptive responses from caregivers leads children to learn to contain their signs of distress, and deters them from continuing to reach out for help (Ainsworth, 1978). During adulthood, people with an anxious avoidant style may perceive others as being untrustworthy and unsupportive, leading to discomfort with emotional intimacy and dependency. Avoidant individuals often demonstrate fear of intimacy, emotional highs and lows, and jealousy in their romantic relationships (Hazan & Shaver, 1987).

In contrast to the negative outcomes typically associated with insecure attachment styles, secure attachment has been found to facilitate successful development towards adulthood, and provide a foundation for individual well-being (Shulman, Kalnitzki & Shahar, 2009; Guarnieri, Snorti & Tani, 2014). Compared to the experiences of people with insecure attachments, securely attached individuals are more likely to describe their experiences of love as happy, friendly and trustful. In addition, romantic relationships between securely attached partners continue for longer durations on average compared to those between insecurely attached individuals (Hazan & Shaver, 1987).

Threats to Attachment. Internal working models developed early in life provide a foundation for how individuals perceive attachment figures' availability later in life, but the sense of availability and security continues to be reassessed based on the context of the current

relationship (Holman, Galbraith, Timmons, Steed, & Tobler, 2009). As opposed to being a fixed aspect of personality, attachment has come to be understood as a relational construct that adapts based on the combination of the influence of internal working models and the quality of the current attachment relationship (Kobak, 1999). In this way, attachment insecurity can develop at any point during the lifespan if the availability of an attachment figure is threatened (Holman et al., 2009).

Availability extends beyond the physical presence of an attachment figure, and represents the culmination of accessibility, responsiveness, and open communication. Accessibility and responsiveness are the primary factors contributing to availability, which are promoted by open communication (Bowlby, 1973). If any of the factors of availability are threatened, insecure attachment can consequently develop. First, accessibility is threatened by any real or perceived possibility of separation between an individual and their attachment figure. Second, a threat to responsiveness occurs if a caregiver or romantic partner is unable or unwilling to adequately react to an individual's needs (Kobak, 1999). Finally, open communication is threatened in romantic relationships when an individual feels that their partner is reluctant to engage in positive, ongoing communication. If open communication is compromised an attachment figure may subsequently be unaware of their child or partner's needs, and therefore unable to demonstrate accessibility and responsiveness (Holman et al., 2009).

Emerging Adulthood

Emerging adulthood refers to the period between adolescence and adulthood, including individuals between eighteen and twenty-five years of age (Arnett, 2000). Emerging adulthood is a critical period of development as parental attachment, romantic relationships and psychosocial adjustment overlap during this phase (Kumar & Mattanah, 2016). Emerging adults have the

greatest opportunity for identity exploration, particularly regarding romantic relationships, work, and their worldviews. While engaging in self-exploration, emerging adults begin to consider what kind of partner they want, and develop more serious and intimate relationships than those typical of adolescence (Arnett, 2000). As emerging adults engage in a variety of romantic and sexual experiences, a significant developmental task of emerging adulthood is learning how to successfully initiate, sustain, and terminate relationships (Snyder, 2006). Although the majority of emerging adults continue to meet their partners in traditional settings, such as work, school or social events, the internet and communication technology often contribute to the process of initiating a relationship (Gala & Kapadia, 2013; Sprecher, 2009).

Technology Use

Emerging adults have greater access and use communication technologies at a much higher rate and frequency during the day compared to other age groups (Burdette, Ellison, Glenn & Hill, 2009; Hargittai & Hinnant, 2008; Walker, Krehbiel & Knowyer, 2009). Findings from the Pew Research Center (2010, 2013) indicate that emerging adults reported the heaviest daily internet use compared to other daily internet users, and are the most likely age group to report initiating their relationships online. The high rates of online behaviors reported by emerging adults demonstrate that they are living out their relationships through social networking sites and other technological mediums in novel ways. For instance, many people now use social networking sites to initiate and maintain their relationships, including nearly half of emerging adults who have reported behaviors such as flirting or checking up on a previous romantic partner online (Marshall, Bejanyan, Castro & Lee, 2013; Smith & Duggan, 2013). The current body of research has suggested a variety of explanations for the growing pattern of emerging adults using technology to connect in their interpersonal relationships.

The participants of one study including emerging adults indicated that interacting using communication technologies provided greater control during social interactions compared to face-to-face interactions (Madell & Muncer, 2007). Individuals who have difficulty forming relationships through face-to-face interactions may also choose to start relationships online as a safer means to connect with others, and comfortably increase risk and develop greater intimacy (Buote, Wood & Pratt, 2009; Brown, 2006). Similar findings have also indicated that the perceived anonymity provided by communication technology promotes greater self-disclosure, and allows individuals to plan their interactions, and connect with people with whom they share values and interests (Bargh & McKenna, 2004). Although communication technology may promote connection and relationship maintenance, it can also be detrimental to the relationship if used negatively or if it otherwise detracts from the couple relationship (Coyne et al., 2011).

Jealousy

Jealousy is considered a universal human experience and can have positive relational outcomes at low levels, such as demonstrating attention and love towards one's partner, and determining relational boundaries (Bernhard, 1986; Buss, 2000; Guerrero, 1998). However, it can also be one of the most destructive emotions in romantic relationships and lead to negative outcomes when frequent or extreme experiences of jealousy, or jealousy in response to imagined situations are present in the relationship (Buunk & Bringle, 1987; Mullen & Martin, 1994). Similar to attachment orientation, jealousy can be considered a means of relationship maintenance and decreasing threats to attachment bonds (Sharpsteen & Kirkpatrick, 1997).

Jealousy and attachment share several common features, including focusing on maintaining the relationship, being activated by separation, sharing same basic emotions, and provoking a sense of safety when one's partner is responsive (Marazitti et al., 2010). While

caregivers serve as the attachment figure during childhood, this role is usually transferred to another adult, such as one's romantic partner, during adulthood. From an attachment perspective, availability is commonly associated with exclusivity between romantic or sexual partners. Consequently, romantic jealousy may be elicited if availability is threatened when there is a potential of abandonment or fear of losing exclusivity with one's partner (Sharpsteen & Kirkpatrick, 1997). Additionally, previous research has indicated that attachment can influence the frequency and patterns of jealousy displayed by individuals, and the impact that the experiences of jealousy have on relationship satisfaction (Marazitti et al., 2010; Dandurand & Lafontaine, 2013).

Relationship Satisfaction

As one of the strongest indicators of relational stability and individual psychosocial health and well-being across the life-span, it is important to understand the factors impacting relationship satisfaction (Bookwala, 2005; Dush & Amato, 2005). Previous research has indicated mixed outcomes of technology on couple satisfaction, and has demonstrated a significant relationship between attachment and relationship satisfaction (Coyne et al., 2012; Kumar & Mattanah, 2016). Positive relational outcomes of communication technology include increased commitment, satisfaction, and communication between partners (Sidelinger, Ayash, Godorhazy & Tibbles, 2008; Coyne et al., 2011). However, other findings suggest that technology may become problematic, increase conflict, and negatively impact relationship satisfaction (Ahlstrom, Lundberh, Zabriskie, Eggett & Lindsay, 2012; Coyne et al., 2012; Schade, Sandberg, Bean, Busby, & Coyne, 2013).

These findings are particularly meaningful when considering the romantic relationships of emerging adults, since they are more likely to use technology and therefore potentially facing

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an increased risk of negative outcomes related to technology. Emerging adults must learn to manage conflict and develop satisfying relationships, which is largely determined by the foundation of parental attachment developed early in life (Creasey & Heason-McInnis, 2001; Kumar & Mattanah, 2016). As relational outcomes during emerging adulthood have a lasting influence on later relationships, the aim of the current study is to further our understanding of the associations between attachment, technology use, jealousy, and relationship satisfaction among emerging adults.

Methods

Participants

The total number of participants who took part in the initial study included 614 people, who were primarily undergraduate students at East Carolina University. However, researchers suspect that there may have been a technological issue that caused the Facebook Jealousy Scale and Experiences in Close Relationships Scale to not be presented to participants as both scales were not completed by the same participants. For the purposes of the current study, participants who did not complete these two scales were excluded, leaving a sample of 266 participants.

As recruitment had primarily taken place through undergraduate courses, the majority of participants were likely to be emerging adults. The sample included participants from a variety of backgrounds, and participants were not excluded based on any demographic information. Based on the demographic information, 71.4% of the participants identified as female, while 28.6% identified as male. The majority of participants (93.2%) identified as heterosexual. The average age of participants was 20.94 years of age, and the majority (95.2%) of the sample was from North Carolina. The racial demographics of the sample were 62.4% white, 24.4% African American, 5.3% Hispanic or Latino, 2.3% Asian, 1.1% Pacific Islander, 2.3% American Indian

or Alaskan Native, and 2.3% other. In response to which devices they own or use frequently, the

participants reported the following: 40.2% cell phone, 85.3% smart phone, 35.3% iPad or tablet,

and 84.2% laptop. See Table 1 for additional information regarding sample demographics.

Table 1

Participant Demographics

	Frequency	Percent
Gender		
Female	190	71.4
Male	76	28.6
Sexual Orientation		
Heterosexual	248	93.2
Bisexual	9	3.4
Homosexual	5	1.9
Asexual	4	1.5
Location		
North Carolina	253	95.2
Race		
White/Caucasian	166	62.4
Black/African American	65	24.4
Hispanic/Latino	14	5.3
Asian	6	2.3
American Indian/Alaskan Native	6	2.3
Pacific Islander	3	1.1
Other	6	2.3
Devices Owned or Frequently Used		
Cell Phone	107	40.2
Smart Phone	227	85.3
Tablet/iPad	94	35.3
Laptop	224	84.2

Procedures

The researchers collected data using online Qualtrics software (2014) to distribute a

survey to participants interested in taking part in the study. Prior to beginning the survey, the

participants were also provided an informed consent document outlining the purpose of the

survey, and the potential risks and benefits of participating. Researchers utilized convenience

sampling and random sampling to acquire a sample of emerging adults between the ages of 18

and 25. The majority of participants were recruited from East Carolina University through

undergraduate introductory Psychology courses. Additional participants who were not enrolled at the university were recruited through Facebook invitations and mass emails. The survey began with a number of demographic questions, followed by various measures assessing the participants' patterns of technology use, attachment orientation, rates of jealousy, and relationship satisfaction.

Measures

   Technology Use. The researchers developed several items in order to assess the patterns of technology use demonstrated by the sample of emerging adults. The first scale developed by the researchers assessed participants' overall daily use of different forms of technology. The Technology Type scale included eight total items that were rated on a five-point Likert scale, ranging from never to very frequently. The Technology Type scale demonstrated high reliability based on the Cronbach's alpha coefficient score ($\alpha = .73$). Secondly, the researchers developed a scale specifically assessing how frequently participants used various forms of technology when communicating with their romantic partner. The Technology Type with Romantic Partner scale included eight total items that participants were asked to rate based on a six-point Likert scale, ranging from never to more than ten times a day. Similar to the first technology scale, the Cronbach's alpha coefficient score ($\alpha = .79$) of the Technology Type with Romantic Partner scale indicated high reliability.

   Experiences in Close Relationships Scale (ECR). The ECR was used to measure the attachment orientation of participants. The ECR is a self-report scale, including two eighteen-item subscales for anxiety and avoidance. Participants rate the items based on a seven-point Likert scale, from strongly disagree to agree (Brennan, Clark, & Shaver, 1998). The ECR demonstrates high reliability based on the Cronbach's alpha scores for the avoidance ($\alpha = .94$)

and anxiety ($\alpha = .91$) subscales. In addition to the high reliability of the scale, the measures do not demonstrate significant correlation ($r = .11$) indicating that the subscales are evaluating two distinct dimensions of attachment (Brennan et al., 1998). For the purposes of the current study, the researchers also analyzed the overall reliability of the ECR to confirm reliability across all items ($\alpha = .71$).

Relationship Assessment Scale (RAS). The RAS was utilized to assess overall relationship satisfaction. The RAS includes seven items that participants are asked to rate on a five-point Likert scale, ranging from low satisfaction to high satisfaction, with higher overall scores indicating greater relationship satisfaction (Hendrick, Dicke, & Hendrick, 1988). The Cronbach's alpha coefficient ($\alpha = .86$) of the RAS indicates that the scale demonstrates strong internal consistency (Hendrick et al., 1988).

Facebook Jealousy Scale. The Facebook Jealousy Scale was designed to assess people's experiences of jealousy specifically related to Facebook. The original scale consists of 27-items that are rated on a seven-point Likert scale, from very unlikely to very likely. The original Facebook Jealousy Scale demonstrated high reliability ($\alpha = .96$) (Muise, Christofides, Desmarais, 2009). For the purposes of the current study the researchers developed a shortened version of the scale, including fourteen of the items based on the Facebook Jealousy Scale, with several questions adapted to include Snapchat activity. The adapted version of the scale demonstrated high reliability based on the Cronbach's alpha coefficient scores found by the researchers ($\alpha = .94$).

Research Hypotheses

H1: Based on the findings of Nitzburg and Farber (2013), participants with a secure attachment are expected to report less technology use. Participants who indicate an insecure attachment orientation are predicted to demonstrate a higher frequency of technology use.

H2: Based on the findings of Marazitti and colleagues (2010), securely attached participants are projected to report lower rates of jealousy, compared to participants with an insecure attachment style.

H3: Based on the findings of Coyne et al. (2012), researchers anticipate that more secure attachments and lower rates of jealousy will be predictive of greater relationship satisfaction, while increased rates of jealousy and technology use are expected to negatively affect the relationship satisfaction scores of participants with insecure attachment styles.

Results

Correlation Results

Bivariate Pearson correlations were computed to assess the degree of relatedness among the key model variables being considered. The results of correlations can range from -1.0 to 1.0, with +/- .1 to .3 demonstrating a weak association, +/- .3 to .5 demonstrating a moderate association, and +/- .5 to 1.0 demonstrating a strong association (Cohen, 1988). A slight negative correlation was found between age and technology use ($r = -.29$, $p < .01$), meaning that as age decreases, technology use increases and vice versa. Similarly, age and technology use with romantic partners was also negatively correlated ($r = -.13$, $p < .05$), demonstrating that as age decreased, technology use with romantic partners increased. In addition, total technology use was negatively correlated with the total score on the relationship adjustment scale ($r = -.12$, $p < .05$), and positively correlated with both technology use with romantic partners ($r = .39$, $p < .01$) and jealousy ($r = .21$, $p < .01$). These findings indicate that as total technology use decreased,

relationship satisfaction increased, and that as total technology use increased, so did the total technology use with romantic partners and rates of jealousy. Additionally, preliminary analyses were completed to confirm that the assumptions of normality, linearity, and homoscedasticity were not violated.

Descriptive Analyses

A series of independent sample t-tests were conducted to assess males and females reports of technology use, technology use with partner, relationship satisfaction, and jealousy. A significant difference was found between males and females reports of total technology use ($t =$ 8.18, $p <$.001). Female participants reported greater rates of total technology use ($M = 31.51$, $SD = 4.93$) than males ($M = 27.67$, $SD = 5.99$). In addition, there was also a significant difference found between males and females results of the Facebook Jealousy Scale ($t = 1.98$, $p =$.05). Females demonstrated higher rates of jealousy ($M = 64.15$, $SD = 20.16$) compared to males ($M = 58.63$, $SD = 21.55$). There was no significant difference found between males ($M = 25.33$, $SD = 7.05$) and females ($M = 24.93$, $SD = 6.80$; $t = .64$, $p = .53$) scores on the Relationship Adjustment Scale, or between males ($M = 21.33$, $SD = 6.95$) and females ($M = 21.78$, $SD = 7.58$; $t = -.45$, $p = .66$) rates of technology use with their romantic partner.

Links between Variables

A series of hierarchical regression analyses were conducted to examine the hypothesized associations between attachment orientation, technology use, technology use with romantic partner, jealousy, and relationship satisfaction. The results of the hierarchical regression analyses predicting relationship satisfaction are presented in Tables 2-5.

Hypothesis One. For the model predicting technology use (shown in Table 2), the hierarchical multiple regression revealed that at stage one, age and gender both contributed

significantly to the regression model, $F(2, 574) = 44.74$, $p < .001$ and accounted for 13% of the variation in technology use. Additionally, attachment orientation was a significant predictor of technology use, and the addition of this variable in step two resulted in a significant change in R-square, $F(3, 573) = 35.05$, $p < .001$. After the addition of attachment in step two, age ($\beta = -.189$, $p < .001$), gender ($\beta = .271$, $p < .001$), and attachment orientation ($\beta = .144$, $p < .001$) all demonstrated significant main effects. These results indicate that lower age, gender, and increased attachment insecurity are all related to increased technology use. Together the three independent variables accounted for 15% of the variance in total technology use.

Table 2

Regression Coefficients for Model Predicting Technology Use (n=577)

Variable	Model 1			Model 2		
	B	$SE\ B$	β	B	$SE\ B$	β
Age	-.27	.05	-.21***	-.24	.05	-.19***
Gender	3.20	.46	.27***	3.18	.46	.27***
Age				-.27	.05	-.21***
Gender				3.18	.46	.27***
Attachment Orientation				.02	.01	.14***
R^2		.13			.15	
ΔR^2		.13***			.02***	

Note: $^{\dagger}p < .10$. * $p < .05$. **$p < .01$ *** $p < .001$
    Higher scores on ECR indicate increased attachment insecurity.

For the model predicting technology use with romantic partner (shown in Table 3), the hierarchical multiple regression revealed that at stage one, age and gender did not provide a

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significant contribution to the regression model, $F(2, 262) = 2.28$, $p = .10$ and accounted for only 1% of the variation in technology use with romantic partner. However, the addition of attachment orientation in step two was a significant predictor of technology use with romantic partner and resulted in a significant change in R-square, $F(3, 261) = 8.36$, $p < .001$. Similar to the findings of the model predicting technology use, the results with the addition of attachment ($\beta = .268$, p < .001) indicate that the lower the attachment security, the higher the use of technology with romantic partners. Together the three independent variables accounted for 7.7% of the variance in technology use with romantic partner.

Table 3

Regression Coefficients for Model Predicting Technology Use with Romantic Partner (n=265)

Variable	Model 1			Model 2		
	B	SE B	β	B	SE B	β
Age	-.19	.09	-.13*	-.14	.09	-.10
Gender	.06	1.02	.00	.10	.99	.01
Age				-.19	.09	-.13*
Gender				.06	1.02	.00
Attachment Orientation				.06	.01	.27***
R^2		.02			.09	
ΔR^2		.01			.08***	

Note: $^{\dagger}p < .10$. $*p < .05$. $**p <.01$ $***p <.001$
      Higher scores on ECR indicate increased attachment insecurity.

Hypothesis Two. A hierarchical multiple regression was used to assess the ability of three measures, including attachment, technology use and technology use with romantic partner,

to predict levels of jealousy after controlling for the influence of age and gender (shown in Table 4). At stage one, age and gender did not provide a significant contribution to the regression model, $F(2, 262) = 2.40$, $p = .09$, and accounted for only 1.1% of the variation in jealousy. The additional variables entered at stage two significantly predicted levels of jealousy, and resulted in a significant change in R-square, $F(5, 259) = 4.76$, $p < .001$. The results of this model indicate a significant effect of attachment insecurity ($\beta = .180$, $p < .001$) on experiences of jealousy. Additionally, total technology use was a predictor of jealousy at a trend level ($\beta = .132$, $p < .10$). These findings suggest that participants who reported higher levels of attachment insecurity were more likely to report experiencing jealousy in their relationships. In addition, the results demonstrated a trend between increased technology use and increased jealousy, but the results did not achieve statistical significance. After entry of the additional control measures in step two, the five independent variables accounted for 6.6% of the variance in jealousy.

Table 4

Regression Coefficients for Model Predicting Jealousy (n=577)

Variable	Model 1			Model 2		
	B	*SE B*	*β*	*B*	*SE B*	*β*
Age	-.26	.25	-.07	-.02	.25	-.01
Gender	4.80	2.84	.11†	2.98	2.95	.07
Age				-.26	.25	-.07
Gender				4.80	2.84	.11
Tech Use				.48	.26	.13†
Tech Use w. Partner				.13	.19	.05
Attachment Orientation				.11	.04	.18***
R^2		.02			.08	
ΔR^2		.01†			.07***	

Note: $^†p < .10.$ * $p < .05.$ **$p <.01$ *** $p <.001$
Higher scores on ECR indicate increased attachment insecurity.

Hypothesis Three. For the final model predicting relationship satisfaction (shown in Table 5), the hierarchical regression indicated that age and gender did not provide a significant contribution to the regression model, $F(2, 262) = .71$, $p = .49$. The addition of attachment, technology use, technology use with romantic partner, and jealousy in step two revealed a significant change in R-square, $F(6, 258) = 23.98$, $p < .001$. Significant effects were found for attachment ($β = -.581$, $p < .001$) and jealousy ($β = -.108$, $p < .05$) on relationship satisfaction. The negative beta coefficients found in this model indicate that as attachment insecurity decreases, reported relationship satisfaction increases. Similarly, the negative beta coefficient for

jealousy indicates that decreased experiences of jealousy are predictive of increased relationship satisfaction. Together the six independent variables accounted for 34.3% of the total variance in relationship satisfaction.

Table 5

Regression Coefficients for Model Predicting Relationship Satisfaction (n=265)

Variable	Model 1			Model 2		
	B	*SE B*	*β*	*B*	*SE B*	*β*
Age	.07	.06	.07	-3.68	.05	.00
Gender	.35	.72	.03	.37	.62	.03
Age				.07	.06	.07
Gender				.35	.72	.03
Tech Use				.01	.06	.01†
Tech Use w. Partner				.04	.04	.05
Attachment Orientation				-.09	.01	-.58***
Jealousy				-.03	.01	-.11*
R^2	.01			.36		
ΔR^2	-.00			.34***		

Note: $^{†}p < .10$. * $p < .05$. **$p < .01$ *** $p < .001$
Higher scores on ECR indicate increased attachment insecurity.

Discussion

The purpose of the current study was to explore the associations between one's attachment style, technology use, technology use with one's partner, jealousy, and relationship satisfaction among an emerging adult sample. Previous research has expressed mixed findings

regarding the impact of technology on romantic relationships. For instance, some research has indicated that technology can enhance closeness and connection, and provide an easy method for partners to express affection to one another (Coyne et al., 2011; Valentine, 2006). In contrast, other findings have linked technology to discontentment and relationship dissatisfaction, and increased jealousy and mistrust (Hand, Thomas, Buboltz, Deemer, & Buyanjargal, 2013; Papp, Danielewicz, & Cayemberg, 2012). The findings of the current study provide greater insight into the relational consequences of technology use, and the patterns of technology use and relationship dynamics demonstrated according to one's attachment orientation.

Impact of Attachment on Technology Use

The results of step one of the model for the first research question indicated that younger participants reported higher frequencies of technology use, which is consistent with previous findings that express age influences the amount of technology use within romantic relationships (Hanson, Drumheller, Mallard, McKee, & Schlegel, 2010; Smith, Rainie, & Zickhur, 2011). Coyne and colleagues (2011) found that in addition to using technology more frequently in romantic relationships, younger couples are also more likely to engage in harmful patterns of communication via technology. Additionally, the results of the hierarchical multiple regression analyses confirmed the first hypotheses. The results indicated that attachment insecurity is related to increased technology use and technology use with one's romantic partner. Previous findings have indicated that emerging adults express their attachment styles through their use of social networking sites (Nitzburg & Farber, 2013). The current findings add to the existing literature by demonstrating that attachment styles are expressed across many additional forms of communication technology, and that this pattern is not limited to social networking sites.

Impact of Attachment and Technology on Jealousy

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The second hypothesis was confirmed, indicating that attachment insecurity is a significant predictor of jealousy. Our findings are consistent with previous research that found that participants with secure attachment had the lowest rates of jealousy among the attachment types considered (Hazan & Shaver, 1987). This is a noteworthy finding as it contradicts previous research that found no statistical significance between a measure of jealousy and developmental variables (Clanton & Kosins, 1991). Clanton (1996) indicates that based on the lack of association between jealousy and developmental variables, therapists should not assume that jealousy is related to attachment history. However, our findings express that attachment insecurity is predictive of increased rates of jealousy, and therefore may be a topic of consideration for therapists working with clients struggling with jealousy-related issues. Additionally, the results expressed a trend between higher rates of technology use and increased jealousy. Although our findings did not demonstrate a significant association, these results contribute to previous research that indicates communication technology, such as Facebook and Snapchat, are associated with increased levels of jealousy between romantic partners (Muise, Christofides, & Desmarais, 2009; Utz, Muscanell, & Khalid, 2015).

Predictors of Relationship Satisfaction

The results of the final multiple regression analysis indicated mixed findings regarding the final hypothesis. Insecure attachment has been considered a potential origin of dysfunctional behaviors that contribute to relationship dissatisfaction and dissolution, making it a beneficial factor to consider when researching relationship satisfaction (Hazan & Shaver, 1994). Results from this study indicate that greater attachment security was predictive of increased relationship satisfaction. This result confirms previous research that noted higher satisfaction as a characteristic of relationships between securely attached partners, as well as findings that

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demonstrated a negative association between anxious and avoidant attachment, and relationship satisfaction (Simpson, 1990; Morey, Gentzler, Creasy, Oberhauser, & Westerman, 2013).

In addition to the influence of attachment insecurity on relationship satisfaction, previous research indicated a negative association between cognitive and emotional jealousy and relationship satisfaction (Andersen, Eloy, Guerrero, & Spitzberg, 1995). The findings of Andersen and their colleagues were supported by the results of the current study indicating that lower rates of jealousy were predictive of increased relationship satisfaction. These results also challenge previous research that indicates the use of technology to maintain relationships may foster commitment and relationship satisfaction (Sidelinger, Ayash, Godorhazy, & Tibbles, 2008).

Finally, contrary to our hypothesis technology use was not found to be a significant predictor of relationship satisfaction. The lack of a significant association between technology and relationship satisfaction may be explained by a previous study which found a connection between Facebook intrusion, and jealousy and surveillance behaviors. The results of the study indicated that Facebook intrusion only impacted relationship satisfaction through experiences of romantic jealousy within the relationship (Elphinston & Noller, 2011). Similar to this previous study, our findings may indicate that technology use only impacts relationship satisfaction through its influence on experiences of jealousy between romantic partners. Together, our findings support the concept that attachment style serves as a potential predictor of distress related to jealousy in romantic relationships, and contributes to the previous body of research by indicating the additional role of technology as it relates to attachment and jealousy (Knobloch, Solomon, & Cruz, 2001; Levy & Kelly, 2010; Levy, Kelly, & Jack, 2006).

Limitations

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The current study contributes valuable insight into the pervasive impact of technology within romantic relationships. However, there are a few limitations that need to be addressed. First, the participants were recruited primarily using convenience sampling from a select number of classes held at East Carolina University, and the majority of participants were white, heterosexual, and female. The sampling process and overall sample demographics may limit the generalizability of the findings. Although these results contribute to the existing literature on this subject, future research should try to include a more diverse and representative sample to increase the generalizability of the results. Additionally, the current study controlled for age and included a college-aged sample but cases were not specifically excluded based on age. Future research should focus more specifically on the emerging adult age category to explore their unique patterns of attachment, technology use and relational outcomes.

Another limitation of the current study was that attachment was analyzed based on the overall scores on the ECR, with higher scores indicating increased attachment insecurity. The current results broaden the understanding of how attachment theory relates to technology use and relational outcomes, but does not distinguish between avoidant attachment and anxious attachment. It would be beneficial for future research to expand upon these findings and further identify the patterns of technology use, jealousy and relationship satisfaction demonstrated according to the distinct categories of insecure attachment.

Lastly, due to a significant amount of missing data for the Facebook Jealousy Scale and Relationship Assessment Scale, the researchers chose to exclude cases where these were incomplete in the analyses including jealousy and relationship satisfaction. Despite this limiting the percentage of the sample being considered, the total sample was still large enough to support

the value of our findings. Future research should attempt to replicate these results with a more complete dataset to confirm the current findings.

Future Directions

The current study provides useful insight into current trends of technology use among emerging adults, and the impact of technology use on jealousy and relationship satisfaction. The results of this study also provide a foundation for future research. First, as the majority of the sample was female and there was a significant link between gender and technology use researchers may want to consider the influence of gender. For instance, gender may have an effect on the types of technology being used, or how individuals use technology based on their gender. The types of technology explored in the current study focus on social networking sites and communication technologies, which could potentially be used more frequently by females who are considered to be more social by nature. In contrast, males may express using other mediums of technology, such as video games and other websites, more frequently. Secondly, technology is developing very rapidly, and the favored social networking sites and forms of technology also change very quickly. Although this study attempted to cover the primary forms of technology used by emerging adults currently, these will likely continue to change very quickly as new technologies become available.

Implications and Conclusion

Understanding the consequences of technology use in romantic relationships is a burgeoning issue for marriage and family therapists. The results of the current study contribute to the current body of literature and expand the understanding of the complex associations between one's attachment style, patterns of technology use, jealousy, and relationship satisfaction. The current study has significant implications for future research and applied clinical work.

Research Implications

Research regarding theoretical explanations for patterns of technology use, intimacy, and the consequences of technology on communication are frequently found in nonfamily journals and have limited applicability to couples and families (Hertlein, 2012). Among over 11,000 articles published in couple and family therapy journals between the years of 1996 and 2010, only seventy-nine articles were dedicated to technology-related issues (Blumer, Hertlein, Smith, & Allen, 2012). Not only is the amount of research examining technology as it relates to couples and families very limited, it is also a topic that will require continuing research as technology evolves and its role in interpersonal relationships adapts over time.

This study contributes to the current research by evaluating patterns and outcomes of technology in emerging adult relationships through the lens of attachment theory. The forms of technology included in this study include many of the most current mediums used by emerging adults, providing a valuable overall perspective of technology use. Additionally, the findings demonstrate the influence of technology on relational outcomes, providing a foundation for further research regarding this topic and valuable information for therapists to consider in their clinical work.

Clinical Implications

For marriage and family therapists and other clinicians, understanding the effects of technology on interpersonal relationships and other life factors is a mounting topic that therapists should be attuned to when working with clients. Regarding attachment, this study demonstrates the fundamental impact that it has on a variety of relational outcomes. Understanding clients' attachment style is imperative as the internal working models developed through romantic attachment relationships not only influence relationship satisfaction, but also are significant for overall life satisfaction of emerging adults (Guarnieri et al., 2015).

Additionally, this study confirms that technology use and patterns of technology use with their romantic partner may be pertinent to assess (Nitzburg & Farber, 2013; Murray & Campbell, 2015). Opening the dialogue to allow clients to discuss their technology use could provide insight into other areas of their relationship that may otherwise not be addressed, such as jealousy stemming from technology. Hertlein and Ancheta (2014) describe many methods that therapists can address technology use in couple's therapy to help strengthen the clients' relationship. For instance, one recommendation is to facilitate discussion of the use of technology and its part in the relationship to help each partner better understand the other's feelings and concerns. As it relates to the current study, this may allow each partner to express their feelings of jealousy related to technology use in the relationship in a safe space. Furthermore, when insecurity and jealousy are present in the relationship the therapist can promote conversation of feelings of neglect or hurt, and strengthen the relationship by addressing accountability, transparency, and trust between the partners (Hertlein & Ancheta, 2014).

References

Ahlstrom, M., Lundberg, N. R., Zabriskie, R., Eggett, D., & Lindsay, G. B. (2012). Me, my

    spouse, and my avatar: The relationship between marital satisfaction and playing

    massively multiplayer online role-playing games. *Journal of Leisure Research,* 44(1), 1.

Ainsworth, M. D. S. (1978). *Patterns of attachment: A psychological study of the strange*

    situation. Hillsdale, N.J.: Lawrence Erlbaum Associates.

Andersen, P. A., Eloy, S. V., Guerrero, L. K., & Spitzberg, B. H. (1995). Romantic jealousy and

    relational satisfaction: A look at the impact of jealousy experience and expression.

    Communication Reports, 8(2), 77-85. doi:10.1080/08934219509367613

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through

    the twenties. *American Psychologist*, 55(5), 469-480. doi:10.1037/0003-066X.55.5.469

Bargh, J. A., & McKenna, K. Y. A. (2004). The internet and social life. *Annual Review of*

    Psychology, 55(1), 573-590. doi:10.1146/annurev.psych.55.090902.141922

Bernhard, K. F. (1986). *Jealousy: Its nature and treatment.* J. E. Bernhard (Ed.). Charles C

    Thomas Pub Ltd.

Blumer, M. L. C., Hertlein, K. M., Smith, J. M., & Allen, H. (2014). How many bytes does it

    take? A content analysis of cyber issues in couple and family therapy journals. *Journal of*

    Marital and Family Therapy, 40(1), 34-48. doi:10.1111/j.1752-0606.2012.00332.x

Bookwala, J. (2005). The role of marital quality in physical health during the mature years.

    Journal of Aging and Health, 17(1), 85-104. doi:10.1177/0898264304272794

Bowlby, J. (1969). *Attachment and loss: Attachment* (Vol. 1). New York, NY: Basic Books.

Bowlby, J. (1973). *Attachment and loss: Separation* (Vol. 2). New York, NY: Basic Books.

Bowlby, J. (1977). The making and breaking of affectional bonds. *The British Journal of Psychiatry, 130*(3), 201-210. doi:10.1192/bjp.130.3.201

Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46-76). New York, NY: Guilford Press.

Brown, J. D. (2006). Emerging adults in a media-saturated world. In J. J. Arnett & J. L. Tanner (Eds.), *Emerging adults in America: Coming of age in the 21st century* (pp. 279–299). Washington, DC: American Psychological Association.

Buote, V. M., Wood, E., & Pratt, M. (2009). Exploring similarities and differences between online and offline friendships: The role of attachment style. *Computers in Human Behavior, 25*(2), 560-567. doi:10.1016/j.chb.2008.12.022

Burdette, A. M., Hill, T. D., Ellison, C. G., & Glenn, N. D. (2009). "hooking up" at college: Does religion make a difference? *Journal for the Scientific Study of Religion, 48*(3), 535-551. doi:10.1111/j.1468-5906.2009.01464.x

Buss, D. (2000). *The dangerous passion: Why jealousy is as necessary as love & sex.* Toronto, Ont: The Globe & Mail division of Bell Globemedia Publishing Inc.

Buunk, B., & Bringle, R. G. (1987). Jealousy in love relationships. In D. Perlman & S. Duck (Eds.), *Intimate relationships: Development, dynamics, and deterioration* (pp. 123-147). Thousand Oaks, CA: Sage Publications.

Clanton, C. (1996). A sociology of jealousy. *International Journal of Sociology and Social Policy, 16*(9/10), 171-189. doi:10.1108/eb013274

Clanton, G., & Kosins, D. J. (1991). Developmental correlates of jealousy. In P. Salovey (Ed.), *The psychology of jealousy and envy* (pp. 132-147). New York, NY: Guilford Press.

Coyne, S. M., Busby, D., Bushman, B. J., Gentile, D. A., Ridge, R., & Stockdale, L. (2012).

> Gaming in the game of love: Effects of video games on conflict in couples. *Family*
>
> *Relations, 61*(3), 388-396. doi:10.1111/j.1741-3729.2012.00712.x

Coyne, S. M., Stockdale, L., Busby, D., Iverson, B., & Grant, D. M. (2011). "I luv u:)!": A

> descriptive study of the media use of individuals in romantic relationships. *Family*
>
> *Relations, 60*(2), 150-162. doi:10.1111/j.1741-3729.2010.00639.x

Creasey, G., & Hesson-McInnis, M. (2001). Affective responses, cognitive appraisals, and

> conflict tactics in late adolescent romantic relationships: Associations with attachment
>
> orientations. *Journal of Counseling Psychology, 48*(1), 85-96. doi:10.1037/0022-
>
> 0167.48.1.85

Dandurand, C., & Lafontaine, M. F. (2013). Intimacy and couple satisfaction: The moderating

> role of romantic attachment. *International Journal of Psychological Studies*, *5*(1), 74.

Dush, C. M. K., & Amato, P. R. (2005). Consequences of relationship status and quality for

> subjective well-being. *Journal of Social and Personal Relationships, 22*(5), 607-627.
>
> doi:10.1177/0265407505056438

Elphinston, R. A., & Noller, P. (2011). Time to face it! facebook intrusion and the implications

> for romantic jealousy and relationship satisfaction. *Cyberpsychology, Behavior, and*
>
> *Social Networking, 14*(11), 631-635. doi:10.1089/cyber.2010.0318

Feeney, J. A. (1999). Adult romantic attachment and couple relationships. In J. Cassidy & P.

> Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp.
>
> 355-377). New York, NY: Guilford Press.

Feeney, J. A., & Noller, P. (1991). Attachment style and verbal descriptions of romantic partners. *Journal of Social and Personal Relationships, 8*(2), 187-215. doi:10.1177/0265407591082003

Gala, J., & Kapadia, S. (2013). Romantic relationships in emerging adulthood: A developmental perspective. *Psychological Studies, 58*(4), 406-418. doi:10.1007/s12646-013-0219-5

Goodman-Deane, J., Mieczakowski, A., Johnson, D., Goldhaber, T., & Clarkson, P. J. (2016). The impact of communication technologies on life and relationship satisfaction. *Computers in Human Behavior, 57*, 219-229. doi:10.1016/j.chb.2015.11.053

Guarnieri, S., Smorti, M., & Tani, F. (2015). Attachment relationships and life satisfaction during emerging adulthood. *Social Indicators Research, 121*(3), 833-847. doi:10.1007/s11205-014-0655-1

Guerrero, L. K. (1998). Attachment-style differences in the experience and expression of romantic jealousy. *Personal Relationships, 5*(3), 273-291. doi:10.1111/j.1475-6811.1998.tb00172.x

Hand, M. M., Thomas, D., Buboltz, W. C., Deemer, E. D., & Buyanjargal, M. (2013). Facebook and romantic relationships: Intimacy and couple satisfaction associated with online social network use. *Cyberpsychology, Behavior, and Social Networking, 16*(1), 8-13. doi:10.1089/cyber.2012.0038

Hanson, T. L., Drumheller, K., Mallard, J., McKee, C., & Schlegel, P. (2010). Cell phones, text messaging, and facebook: Competing time demands of today's college students. *College Teaching, 59*(1), 23-30. doi:10.1080/87567555.2010.489078

Hargittai, E., & Hinnant, A. (2008). Digital inequality: Differences in young adults' use of the internet. *Communication Research, 35*(5), 602-621. doi:10.1177/0093650208321782

Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology, 52*(3), 511-524. doi:10.1037/0022-3514.52.3.511

Hazan, C., & Shaver, P. R. (1994). Attachment as an organizational framework for research on close relationships. *Psychological Inquiry, 5*(1), 1-22. doi:10.1207/s15327965pli0501_1

Hendrick, S. S., Dicke, A., & Hendrick, C. (1998). The relationship assessment scale. *Journal of Social and Personal Relationships, 15*(1), 137-142. doi:10.1177/0265407598151009

Hertlein, K. M. (2012). Digital dwelling: Technology in couple and family relationships. Family Relations, 61(3), 374-387. doi: 10.1111/j.1741-3279.2012.00702.x

Hertlein, K. M., & Ancheta, K. (2014). Clinical application of the advantages of technology in couple and family therapy. The American Journal of Family Therapy, 42(4), 313-324. doi:10.1080/01926187.2013.866511

Holman, T. B., Galbraith, R. C., Mead Timmons, N., Steed, A., & Tobler, S. B. (2009). Threats to parental and romantic attachment figures' availability and adult attachment insecurity. *Journal of Family Issues, 30*(3), 413-429. doi:10.1177/0192513X08325013

Knobloch, L. K., Solomon, D. H., & Cruz, M. G. (2001). The role of relationship development and attachment in the experience of romantic jealousy. *Personal Relationships, 8*(2), 205-224. doi:10.1111/j.1475-6811.2001.tb00036.x

Kobak, R. (1999). The emotional dynamics of disruptions in attachment relationships: Implications for theory, research, and clinical intervention. In J. Cassidy & P. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 21-43). New York, NY: Guilford Press.

Kumar, S. A., & Mattanah, J. F. (2016). Parental attachment, romantic competence, relationship

    satisfaction, and psychosocial adjustment in emerging adulthood: Attachment, romance,

    and adjustment. *Personal Relationships, 23*(4), 801-817. doi:10.1111/pere.12161

Levy, K. N., & Kelly, K. M. (2010). Sex differences in jealousy: A contribution from attachment

    theory. *Psychological Science, 21*(2), 168-173. doi:10.1177/0956797609357708

Levy, K. N., Kelly, K. M., & Jack, E. L. (2006). Sex Differences in Jealousy: A Matter of

    Evolution or Attachment History?. In M. Mikulincer & G. Goodman (Eds.), *Dynamics of*

    romantic love: Attachment, caregiving, and sex (pp. 128-145). New York, NY: Guilford

    Press.

Madell, D. E., & Muncer, S. J. (2007). Control over social interactions: An important reason for

    young people's use of the internet and mobile phones for communication?

    CyberPsychology & Behavior, 10(1), 137-140. doi:10.1089/cpb.2006.9980

Marazziti, D., Consoli, G., Albanese, F., Laquidara, E., Baroni, S., & Dell'Osso, M. C. (2010).

    Romantic attachment and subtypes/dimensions of jealousy. *Clinical Practice and*

    Epidemiology in Mental Health, 6(1), 53-58. doi:10.2174/17450179010060100053

Marshall, T. C., Bejanyan, K., Di Castro, G., & Lee, R. A. (2013). Attachment styles as

    predictors of Facebook-related jealousy and surveillance in romantic relationships.

    Personal Relationships, 20(1), 1-22. doi:10.1111/j.1475-6811.2011.01393.x

Morey, J. N., Gentzler, A. L., Creasy, B., Oberhauser, A. M., & Westerman, D. (2013). Young

    adults' use of communication technology within their romantic relationships and

    associations with attachment style. *Computers in Human Behavior, 29*(4), 1771-1778.

    doi:10.1016/j.chb.2013.02.019

Muise, A., Christofides, E., & Desmarais, S. (2009). More information than you ever wanted: Does facebook bring out the green-eyed monster of jealousy? *CyberPsychology & Behavior, 12*(4), 441-444. doi:10.1089/cpb.2008.0263

Mullen, P., & Martin, J. (1994). Jealousy: A community study. *The British Journal of Psychiatry, 164*(1), 35-43. doi:10.1192/bjp.164.1.35

Nitzburg, G. C., & Farber, B. A. (2013). Putting up emotional (facebook) walls? attachment status and emerging adults' experiences of social networking sites. *Journal of Clinical Psychology, 69*(11), 1183-1190. doi:10.1002/jclp.22045

Papp, L. M., Danielewicz, J., & Cayemberg, C. (2012;2011;). "Are we facebook official?" implications of dating partners' facebook use and profiles for intimate relationship satisfaction. *Cyberpsychology, Behavior, and Social Networking, 15*(2), 85-90. doi:10.1089/cyber.2011.0291

Pfeiffer, S. M., & Wong, P. T. P. (1989). Multidimensional jealousy. Journal of Social and Personal Relationships, 6(2), 181-196. doi:10.1177/026540758900600203

Prensky, M. (2001). Digital natives, digital immigrants part 1. *On the Horizon, 9*(5), 1-6. doi:10.1108/10748120110424816

Qualtrics (2014). Qualtrics [Software]. Provo, UT.

Schade, L. C., Sandberg, J., Bean, R., Busby, D., & Coyne, S. (2013). Using technology to connect in romantic relationships: Effects on attachment, relationship satisfaction, and stability in emerging adults. *Journal of Couple and Relationship Therapy, 12*(4), 314-338. doi:10.1080/15332691.2013.836051

Sharpsteen, D. J., & Kirkpatrick, L. A. (1997). Romantic jealousy and adult romantic attachment. *Journal of Personality and Social Psychology, 72*(3), 627-640. doi:10.1037/0022-3514.72.3.627

Shulman, S., Kalnitzki, E., & Shahar, G. (2009). Meeting developmental challenges during emerging adulthood: The role of personality and social resources. *Journal of Adolescent Research, 24*(2), 242-267. doi:10.1177/0743558408329303

Sidelinger, R. J., Ayash, G., Godorhazy, A., & Tibbles, D. (2008). Couples go online: Relational maintenance behaviors and relational characteristics use in dating relationships. *Human Communication, 11*(3), 333.

Simpson, J. A. (1990). Influence of attachment styles on romantic relationships. *Journal of Personality and Social Psychology, 59*(5), 971-980. doi:10.1037/0022-3514.59.5.971

Snyder, A. R. (2006). Risky and casual sexual relationships among teens. In A. Booth, A. Crouter, & A. Snyder (Eds.), *Romance and sex in adolescence and emerging adulthood: Risks and opportunities* (pp. 161-169). New York, NY: Routledge.

Sprecher, S. (2009). Relationship initiation and formation on the internet. *Marriage & Family Review, 45*(6-8), 761-782. doi:10.1080/01494920903224350

Utz, S., Muscanell, N., & Khalid, C. (2015). Snapchat elicits more jealousy than facebook: A comparison of snapchat and facebook use. *Cyberpsychology, Behavior, and Social Networking, 18*(3), 141-146. doi:10.1089/cyber.2014.0479

Valentine, G. (2006). Globalizing intimacy: The role of information and communication technologies in maintaining and creating relationships. *Women's Studies Quarterly, 34*(1/2), 365-393.

Walker, K., Krehbiel, M., & Knoyer, L. (2009). "Hey you! just stopping by to say hi!":

Communicating with friends and family on MySpace. *Marriage & Family Review, 45*(6-

8), 677-696. doi:10.1080/01494920903224251

APPENDIX A: INSTITUTIONAL REVIEW BOARD APPROVAL

EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board Office
4N-70 Brody Medical Sciences Building· Mail Stop 682
600 Moye Boulevard · Greenville, NC 27834
Office **252-744-2914** · Fax **252-744-2284** · **www.ecu.edu/irb**

Notification of Initial Approval: Expedited

From: Social/Behavioral IRB

To: Alan Taylor

CC: Damon Rappleyea
            Courtney Epps

Date: 1/25/2016

Re: **UMCIRB 15-001392**
            Relationship Attachment and Technology Use

I am pleased to inform you that your Expedited Application was approved. Approval of the study and any consent form(s) is for the period of 1/25/2016 to 1/24/2017. The research study is eligible for review under expedited category # 7. The Chairperson (or designee) deemed this study no more than minimal risk.

Changes to this approved research may not be initiated without UMCIRB review except when necessary to eliminate an apparent immediate hazard to the participant. All unanticipated problems involving risks to participants and others must be promptly reported to the UMCIRB. The investigator must submit a continuing review/closure application to the UMCIRB prior to the date of study expiration. The Investigator must adhere to all reporting requirements for this study.

Approved consent documents with the IRB approval date stamped on the document should be used to consent participants (consent documents with the IRB approval date stamp are found under the Documents tab in the study workspace).

The approval includes the following items:

Name	Description
SURVEY Sample Cover Letter 10 7 14.docx	Consent Forms
Tech and Relationships Codebook 4-2015.docx	Surveys and Questionnaires

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

APPENDIX B: EXPERIENCES IN CLOSE RELATIONSHIPS SCALE

	Strongly Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Neither Agree nor Disagree (4)	Somewhat Agree (5)	Agree (6)	Strongly Agree (7)
1. I'm afraid that I will lose my partner's love. (1)	○	○	○	○	○	○	○
2. I often worry that my partner will not want to stay with me. (2)	○	○	○	○	○	○	○
3. I often worry that my partner doesn't really love me. (3)	○	○	○	○	○	○	○
4. I worry that romantic partners won't care about me as much as I care about them. (4)	○	○	○	○	○	○	○
5. I often wish that my partner's feelings for me were as strong as my feelings for him or her. (5)	○	○	○	○	○	○	○
6. I worry a lot about my relationships. (6)	○	○	○	○	○	○	○
7. When my partner is out of sight, I worry that he	○	○	○	○	○	○	○

or she might become interested in someone else. (7)						
8. When I show my feelings for romantic partners, I'm afraid they will not feel the same about me. (8)	○	○	○	○	○	○	○
9. I rarely worry about my partner leaving me. (9)	○	○	○	○	○	○	○
10. My romantic partner makes me doubt myself. (10)	○	○	○	○	○	○	○
11. I do not often worry about being abandoned. (11)	○	○	○	○	○	○	○
12. I find that my partner(s) don't want to get as close as I would like. (12)	○	○	○	○	○	○	○
13. Sometimes romantic partners change their feelings about me for no apparent reason. (13)	○	○	○	○	○	○	○
14. My desire to be very	○	○	○	○	○	○	○

close sometimes scares people away. (14)							
15. I'm afraid that once a romantic partner gets to know me, he or she won't like who I really am. (15)	○	○	○	○	○	○	○
16. It makes me mad that I don't get the affection and support I need from my partner. (16)	○	○	○	○	○	○	○
17. I worry that I won't measure up to other people. (17)	○	○	○	○	○	○	○
18. My partner only seems to notice me when I'm angry. (18)	○	○	○	○	○	○	○
19. I prefer not to show a partner how I feel deep down. (19)	○	○	○	○	○	○	○
20. I feel comfortable sharing my private thoughts and feelings with my partner. (20)	○	○	○	○	○	○	○
21. I find it difficult to	○	○	○	○	○	○	○

allow myself to depend on romantic partners. (21)							
22. I am very comfortable being close to romantic partners. (22)	○	○	○	○	○	○	○
23. I don't feel comfortable opening up to romantic partners. (23)	○	○	○	○	○	○	○
24. I prefer not to be too close to romantic partners. (24)	○	○	○	○	○	○	○
25. I get uncomfortable when a romantic partner wants to be very close. (25)	○	○	○	○	○	○	○
26. I find it relatively easy to get close to my partner. (26)	○	○	○	○	○	○	○
27. It's not difficult for me to get close to my partner. (27)	○	○	○	○	○	○	○
28. I usually discuss my problems and concerns with my partner. (28)	○	○	○	○	○	○	○
29. It helps to turn to my romantic	○	○	○	○	○	○	○

partner in times of need. (29)							
30. I tell my partner just about everything. (30)	○	○	○	○	○	○	○
31. I talk things over with my partner. (31)	○	○	○	○	○	○	○
32. I am nervous when partners get too close to me. (32)	○	○	○	○	○	○	○
33. I feel comfortable depending on romantic partners. (33)	○	○	○	○	○	○	○
34. I find it easy to depend on romantic partners. (34)	○	○	○	○	○	○	○
35. It's easy for me to be affectionate with my partner. (35)	○	○	○	○	○	○	○
36. My partner really understands me and my needs (36)	○	○	○	○	○	○	○

APPENDIX C: TECHNOLOGY TYPE SCALE

Please identify how often you use technology in a typical day.

	Never (1)	Rarely (2)	Sometimes (3)	Regularly (4)	Very Frequently (5)
a. Email (1)	○	○	○	○	○
b. Cell Phone Talking (2)	○	○	○	○	○
c. Cell Phone Texting (3)	○	○	○	○	○
d. Facebook (4)	○	○	○	○	○
e. Instagram (5)	○	○	○	○	○
f. Twitter (6)	○	○	○	○	○
g. SnapChat (7)	○	○	○	○	○
h. Face Time/Skype (8)	○	○	○	○	○

APPENDIX D: TECHNOLOGY TYPE WITH ROMANTIC PARTNER SCALE

Think about your romantic partner when answering the following questions.

	Never (1)	1-2 times a week (2)	Several times a week (3)	1-2 times a day (4)	3-5 times a day (5)	More than 10 times a day (6)
How often do you communicate with your romantic partner by talking on your cell phone during a typical week? (1)	❍	❍	❍	❍	❍	❍
How often do you communicate with your romantic partner by texting during a typical week? (2)	❍	❍	❍	❍	❍	❍
How often do you communicate with your romantic partner using Skype or Face Time during a typical week? (3)	❍	❍	❍	❍	❍	❍
How often do you communicate with your romantic partner using email during a typical week? (4)	❍	❍	❍	❍	❍	❍
How often do you communicate with your romantic partner using Snapchat during a typical week? (5)	❍	❍	❍	❍	❍	❍
How often do you communicate with your romantic partner using Instagram during a typical week? (6)	❍	❍	❍	❍	❍	❍
How often do you communicate with your romantic partner using Facebook during a typical week? (7)	❍	❍	❍	❍	❍	❍
How often do you communicate with your romantic partner using Twitter during a typical week? (8)	❍	❍	❍	❍	❍	❍

APPENDIX E: ADAPTED FACEBOOK JEALOUSY SCALE

Think about your romantic partner as you answer the following questions. How likely are you to…

	Very Unlikely (1)	Somewhat Unlikely (2)	Unlikely (3)	Neither Unlikely or Likely (4)	Likely (5)	Somewhat Likely (6)	Very Likely (7)
1. Become jealous if your partner sends pictures/makes walls posts of him/herself that are sexually provocative? (1)	○	○	○	○	○	○	○
2. Become jealous if your partner sends pictures/makes wall posts of him/herself with a previous romantic or sexual partner? (2)	○	○	○	○	○	○	○
3. Become jealous if your partner added a previous romantic or sexual partner to his or her friends list? (3)	○	○	○	○	○	○	○
4. Become jealous if your partner private messaged an unknown member of the opposite sex? (4)	○	○	○	○	○	○	○

5. Become jealous if your partner sends pictures/makes walls posts of him/herself with unknown members of the opposite sex? (5)	○	○	○	○	○	○	○
6. Become jealous if your partner sends pictures/makes walls posts of him/herself with an arm around a member of the opposite sex? (6)	○	○	○	○	○	○	○
7. Become jealous if your partner sends a snap/wall post to an unknown member of the opposite sex? (7)	○	○	○	○	○	○	○
8. Become jealous if your partner has added an unknown member of the opposite sex? (8)	○	○	○	○	○	○	○
9. Check your partners "top friends"/Facebook page on a regular basis? (9)	○	○	○	○	○	○	○
10. Become jealous if your partner private messaged a mutual friend of the opposite sex? (10)	○	○	○	○	○	○	○
11. Become jealous if your partner has	○	○	○	○	○	○	○

received a snap/wall post from an unknown member of the opposite sex? (11)							
12. Worry that you partner is using Snapchat/Facebook to initiate relationships with members of the opposite sex? (12)	○	○	○	○	○	○	○
13. Become jealous if your partner has received a snap/wall post from a mutual friend of the opposite sex? (13)	○	○	○	○	○	○	○
14. Become jealous if your partner sends a snap/wall post to a mutual friend of the opposite sex? (14)	○	○	○	○	○	○	○

APPENDIX F: RELATIONSHIP ASSESSMENT SCALE

Rate your satisfaction in your current relationship on a scale from 1 to 5 with 1 being low and 5 being high.

	1 = Low (1)	2 (2)	3 (3)	4 (4)	5 = High (5)
1. How well does your partner meet your needs? (1)	○	○	○	○	○
2. In general, how satisfied are you with your relationship? (2)	○	○	○	○	○
3. How good is your relationship compared to most? (3)	○	○	○	○	○
4. How often do you wish you hadn't gotten into this relationship? (4)	○	○	○	○	○
5. To what extent has your relationship met your original expectations? (5)	○	○	○	○	○
6. How much do you love your partner? (6)	○	○	○	○	○
7. How many problems are there in your relationship? (7)	○	○	○	○	○