

Spring 4-30-2016

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Communication technology use and perceptions in romantic relationships:

The role of attachment

By

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Honours Thesis

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April 2016

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Abstract

Increased use of communication technology amongst emerging adults has been shown to impact their romantic relationships. The type of impact on the relationships can vary and may be attributed to multiple different variables. The present study examined the relationship between the frequency of communication technology used within and outside romantic relationships, jealousy, perceived impact of technology on relationship intimacy, relationship satisfaction, and attachment styles. Participants included 93 undergraduate students from first and second-year psychology courses at King's University College, who were currently in a romantic relationship of at least three months. Participants completed an online survey of all measures composed of approximately 100 questions. Results indicated a positive relationship between one's own communication technology use outside the relationship and jealousy. The findings also suggested that those who utilize communication technology more within their relationship perceive it as both intimacy enhancing as well as reducing. Therefore, the more experience a couple has with using communication technology the more aware they become of the benefits and drawbacks it has on the relationship. However, while aware of the positive and negative influences of technology, these perceptions were still found to relate to lower levels of relationship satisfaction as indicated by a significant negative relationship. This study contributes to the growing body of research on perceptions and use of communication technology, attachment styles and its influence on romantic relationships; thus offering insight into promotion of healthier communication within romantic relationships.

Communication technology use and perceptions in romantic relationships:

The role of attachment

According to a report in Pew Internet based on a American sample, emerging adults between the ages of 18 and 24 who own a cell phone exchange an average of 109.5 messages on a normal day; young adults are by far the most avid texters (Smith, 2011). Due to the extensive use of communication technology to communicate with others in emerging adults, it is inevitable that it will have some impact on romantic relationships. One study found that 45% of internet users ages 18 to 29 in serious relationships said the internet has had an impact on their relationship, while just 10% of online adults 65 and older said the same (Lenhart & Duggan, 2014). In addition, the explosion of types and accessibility to communication technologies has allowed for an increased ability to communicate with a romantic partner in a variety of ways, as well as from almost any geographical location. With the fast pace of communication technology growth, it is important for researchers to try and understand the implications of communication technology use, especially as communication in romantic relationships has been shown to be one of the most important factors for maintenance of long term relationships and predicting positive outcomes in relationships (Epstein, Warfel, Johnson, Smith, & McKinney, 2013).

The study of romantic relationships in emerging adults is also very important as romantic relationship formation and maintenance is central in the lives of emerging adults and represents an important developmental milestone (Arnett, 2000, 2004). Moreover, identity domains relevant to romantic relationships are shown to become a central point of the identity formation process (Arnett, 2000). In addition, emerging adults are provided with a sense of security and more positive self-conceptions when positive relationship behaviours associated with intimacy (e.g., self-disclosure) occur (Montgomery, 2005). Furthermore, romantic relationship intimacy has

been found to positively correlate with well being in emerging adults (Johnson, Kent, & Yale, 2012). Thus, research in the area of romantic relationships and communication technology use is both relevant and important in regards to the emerging adult population. The purpose of the present study will be to contribute to previous research in the area of emerging adults communication technology use, romantic relationship quality and attachment styles.

Research on the general impact of communication technology on romantic relationships has varied, with results displaying both positive and negative influences (Coyne, Stockdale, Busby, Iverson, & Grant, 2011). For example, communication technology use is helpful to couples as it allows intimacy throughout the day when in-person communication is not possible (Pettigrew, 2009). Individuals in long distance relationships have been found to use communication technology for relational maintenance (Billedo, Kerkhof, & Finkenauer, 2015). However, the use of communication technology can also lead to negative outcomes. In one study, a popular communication technology platform, Facebook, was found to increase jealousy within a relationship based on the partner's use of the platform to communicate with others outside the relationship (Muise, Christofides, & Desmarais, 2009). In more serious situations, communication technology can allow for controlling behaviours, such as a partner being able to keep tabs on the other partner's whereabouts and activities, which is more likely to occur in abusive relationships (Schnurr, Mahatmya, & Basche, 2013). A more common negative impact is the partner's use of communication technology outside of the relationship, which may take away from quality communication when the couple is together or in other circumstances (Campbell & Murray, 2015). With research showing both positive and negative impacts of communication technology use within romantic relationships, some researchers have taken an individual differences approach, looking at individual's characteristics to understand and explain these

mixed findings. One explanation that has been explored in research is attachment styles, and the role they play in communication technology used for connecting with their romantic partner.

Attachment theory is originally based on the attachment of the infant to their early caregiver, specifically interactions involving the caregiver's response to infant distress (Ainsworth, Blehar, Waters, & Wall, 1978). According to attachment theory, these primary patterns of interaction can be classified as secure, avoidant or anxious (Hazan & Shaver, 1987; Mikulincer, Shaver, & Pereg, 2003; Simpson, 1990) and have implications for our adult relationships. Those with a secure attachment are shown to be a result of having both responsive and supportive caregivers during childhood (Ainsworth et al., 1978). In relationships, these individuals can trust and depend on others, are comfortable with closeness, and do not worry excessively about abandonment (Mikulincer & Shaver, 2007). An individual's avoidant attachment style would have been a result of maladaptive caregiving responses, and can lead to a fear of self-disclosure, intimacy and dependence (Ainsworth et al., 1978). Thus, in romantic relationships these individuals deny needs for intimacy, show defensive distancing and divert attention away from emotions and thoughts (Mikulincer & Shaver, 2007). People exhibiting an anxious attachment tend to have an intense fear of abandonment, but a high need for intimacy and closeness. Therefore, they may feel distressed when these needs for closeness to their partners are not met. This anxious attachment pattern may develop from a caregiver being unpredictable, or in other words inconsistently responsive, causing difficulty for the child to develop a sense of security (Ainsworth et al., 1978). Consequently, in romantic relationships these individuals may often be controlling, intrusive and clingy so as to obtain proximity, care and attention (Mikulincer & Shaver, 2007). With attachment styles playing an important role in romantic relationships, research has focused on how they impact certain relational qualities. In

addition, exploring attachment styles in regards to the association between relational qualities and technology use has also been conducted.

The effect of varying attachment styles on relationship jealousy has been examined in several studies. Buunk (1997) found that individuals with an anxious attachment style were more jealous in comparison to those with an avoidant attachment, with secure attached individuals being the least jealous. With this finding, research has further investigated how jealousy, in relation to use of communication technology can be explained by attachment styles. In one study, researchers found avoidant attachment to be negatively associated, and anxious attachment positively associated (mediated by lower trust) with Facebook jealousy and surveillance (Marshall, Bejanyan, Di Castro, & Lee, 2013). The mediation of trust in this study is also supported in other studies where trust was found to correlate with insecure attachments and Facebook jealousy in romantic relationships. For instance, those who are insecurely attached tend to experience lower levels of trust in their romantic relationships (Simpson, 1990); and findings of those lower in trust tending to have high rates of jealousy in regards to Facebook (Muisse et al., 2009).

Given the importance of intimacy in romantic relationships a significant amount of research has focused on how intimacy may be influenced by certain attachment styles. For example, findings from one study indicated that insecurely attached individuals experience lower levels of intimacy (Simpson, 1990). Although, when examining the relationship between communication technology use and intimacy, greater use was positively correlated with intimacy for those higher on attachment anxiety (Morey, Gentzler, Creasy, Oberhauser, & Westerman, 2013). Nitzburg and Farber (2013) found that feelings of intimacy when using social networking sites (SNS) were predicted by anxious attachment. This is not surprising as one of the benefits of

SNS is allowing instant, continuous connection with a partner, which may help meet needs of intimacy and closeness for anxiously attached individuals.

Another type of communication technology that may be considered intimate is sexting. Sexting can be defined as any picture or text message with sexual intentions being sent or received. The frequency of sexting by individuals in relationships has been found to be more common among those with insecure attachments. This is shown by findings of anxious attachment relating to more sexual text messages, and avoidant attachment with more of both sexual pictures and text messages compared to securely attached (Morey et al., 2013). This study further displays how technology may be used to meet the needs of insecurely attached individuals, such that anxiously attached individuals may feel even more close and intimate towards a partner via sexts. While avoidant individuals may find intimacy and/or sexual needs easier to meet via texting to avoid face-to-face communication (Nitzburg & Farber, 2013). Attachment styles clearly play a role in the impact of communication technology on intimacy in relationships. However, research has also looked at how technology use alone can impact intimacy by either enhancing or reducing it. Some examples of how technology can enhance intimacy include making one feel more emotionally and/or sexually connected, learning more about one's partner via SNS and using technology to aid in resolving relational conflict. Examples of how technology may reduce intimacy include using it to avoid problems, being a distraction when partners are together, seeking other companionship and using technology for surveillance and/or control of one's partner (Campbell & Murray, 2015).

Relationship satisfaction is another variable that has been studied in understanding the impact of communication technology on relationships. Luo (2014) found that in any couple, the more interactions between partners that occur via texting, the less happy the individuals in the

relationship would be. While another study found the relationship between online communication and overall relationship satisfaction to be mediated by intimacy, such that intimacy may act as a protecting buffer (Hand, Thomas, Buboltz, Deemer, & Buyanjargal, 2012). So, overall relationship satisfaction can be impacted either positively or negatively based on if needs for intimacy are being met through use of specific channels of communication technology. Attachment styles may also play a role in relationship satisfaction, as those with insecure attachments have been found to have lower levels of relationship satisfaction than those who are securely attached (Simpson, 1990).

As outlined previously, there has been considerable research on attachment styles, technology use and romantic relationships. However, past research on individuals' perception of their partner's use of communication technology, and how that relates with attachment styles and relational qualities has been rare. Although, perceptions in general towards an individual's romantic relationship are shown to be important and have been well researched in how it affects the individual, relationship quality and satisfaction. Perceptions of one's romantic relationship being good or bad and the interpretations that are made have shown to influence emotions, motivation and behavior. Moreover, the individual's actual behaviour toward the partner and the romantic relationship itself is then influenced by these emotions and expectations (Fletcher & Thomas, 2000). Relationship satisfaction specifically has been shown to be higher when individuals perceive their partners positively (Cobb & Bradbury, 2001). Furthermore, emerging adults believe they are valued, recognized and behaviourally supported when they perceive their relationship partner as being supportive and responsive to their needs (Reis, Clark, & Holmes, 2004). Given the importance of perceptions in romantic relationships, some research has begun to examine the area in addition to communication technology use, and how that relates with

attachment styles and relational qualities. Out of the few existing studies, one looked at the participants' perception of their own relationship, and how that related to Facebook use. Findings displayed that partners who perceived uncertainty in their relationship used Facebook monitoring more so as to maintain their relationship (Stewart, Dainton, & Goodboy, 2014). Another study examined the relationship between intimacy and the perception of a romantic partner's online social network use and found a negative relationship (Hand et al., 2012). This finding suggests the idea of intimacy being enhanced or reduced based only on the perception of a romantic partner's online social network use.

In conclusion, with the technological world rapidly developing with new ways to communicate within various relationships it has become an important area of research; not only because of the relevance of technologies role in society, specifically emerging adults, but also in investigating how technology use relates with relational qualities such as intimacy, relationship satisfaction, and negative aspects of relationships such as jealousy. Moreover, understanding why individuals use certain channels of communication technology more than others to communicate in romantic relationships has led to a focus on examining attachment styles as an explanation. However, research has begun to focus on the perception of use of communication technology outside of romantic relationships, and how that may in turn impact the romantic relationship. Therefore, the present study included a measure for perception of romantic partners' use of communication technology in addition to measures of use within the romantic relationship. Also, Campbell and Murray's (2015) Technology and Intimate Relationship Assessment was completed, which measured the participants' perception of technology use and how that technology use either enhances or reduces their romantic relationship intimacy. Possible relationships between the results of Campbell and Murray's measure and attachment

styles were explored. Although, while researchers have tried to keep up with the commonly used and popular communication technology platforms used in and outside romantic relationships by emerging adults, the bulk of existing research has focused on emailing, texting, sexting and Facebook. But, other platforms have surfaced and also become highly used, which may take away from the use of some of these commonly researched communication technology platforms. To keep up with modern communication technology, Snap Chat, a new smartphone application, was also included in this study. Snap Chat allows its user to send a picture or video with a brief text caption, and has become a popular communication technology platform within the past five years. Along with Snap Chat, Facebook and other common communication technology platforms were measured in terms of frequency of use.

The purpose of the present study is to contribute to research in the area of communication technology use, romantic relationship quality and attachment styles, to further understanding around the impact of communication technology in relationships. Specifically, I investigated how the frequencies of communication technology use in, and outside of a romantic relationship associated with jealousy, intimacy and relationship satisfaction in terms of attachment styles. Frequency of communication technology use was measured in terms of specific use across multiple communication technology platforms and overall use in three categories. These categories included frequency of communication technology use with others excluding the participant's romantic partner, perception of the partner's frequency use excluding the participant, and frequency of use specifically within the romantic relationship. Participants' scores on anxious and avoidant attachment dimensions were used to measure participants' attachment style. Jealousy was operationally defined based on cognitive, emotional and behavioural dimensions using one multidimensional measure. The participants' perception of

technologies impact on their relationship intimacy was measured with both positive and negative aspects of technology use in romantic relationships. Relationship satisfaction was measured based on intimacy, trust and specific relationship satisfaction questions. Furthermore, undergraduate students from first and second year psychology courses who were in a romantic relationship of at least three months filled out the measures listed above.

The present study had three different hypotheses based on the multiple variables being measured. First, it was hypothesized that a positive correlation would exist between the frequency of communication technology one perceives their romantic partner uses and jealousy, moderated by an anxious attachment style, such that if the participant has an anxious attachment style, higher perceived partner use of communication technology would predict higher levels of jealousy. Frequency of communication technology used by one self was also hypothesized to positively correlate with jealousy, moderated by an anxious attachment, such that if the participant has an anxious attachment style, their own higher use of communication technology outside the relationship would predict higher levels of jealousy. It was also hypothesized that a positive correlation would exist between the frequency of communication technology used within the romantic relationship and the perceived impact of technology on relationship intimacy, moderated by an anxious attachment style; such that a high frequency of communication technology used within the relationship would predict technology being perceived as intimacy enhancing, if the individual has an anxious attachment style. Lastly, I hypothesized that a positive correlation would exist between the perceived impact of technology on relationship intimacy and relationship satisfaction, moderated by frequency of communication technology used in the relationship. Thus, the more intimacy enhancing participants perceived

their technology use to be in their relationship, the higher their relationship satisfaction score would be, if a high frequency of communication technology were used in their relationship.

Method

Participants

The present study consisted of 93 students (70 females and 23 males), from King's University College. The age of students' ranged from 18-25, with a mean age of 19.18 ($SD=1.47$). The majority of the sample was Caucasian/White (70.2%); other specific ethnicities included Chinese (9.6%) and Indian (4.2%). This study required that participants were currently in a romantic relationship for a minimum of three months, and under the age of 25. Majority of participants were in heterosexual relationships ($n = 92$), with one participant in a homosexual relationship. The length of the romantic relationships ranged from 3-72 months ($M = 14.88$ months, $SD = 14.67$ months), and 28 participants considered their relationship as long distance (i.e. you cannot see your partner, face-to-face, for most days). Students in specific psychology courses were compensated with bonus marks of up to 2.5% for their final course mark, based on a brief assignment completed after participation in the study. Students were made aware that they were free to withdraw from the study at anytime and still receive bonus marks for the written assignment. Students in upper year Psychology courses were compensated with five dollar Tim Hortons gift cards after completing the study.

Measures

Demographic Form. The demographic form (see Appendix A) was used to gather participants' personal information and information about their romantic relationship. Personal information requested included the participants age, ethnicity, gender, age of their first relationship and number of serious relationships they have engaged in. Gender of the

participant's partner, the length of the relationship and whether it is considered a long distance relationship was also asked.

The Experiences in Close Relationship Scale - Short Form (ECR). The ECR–Short form scale (Wei, Russell, Mallinckrodt, & Vogel, 2007), was used to measure attachment style. The scale is made up of two subscales (avoidant and anxious attachment), six statements each scored on a 7-point Likert-scale ranging from 1(*disagree strongly*) to 7(*agree strongly*). Three items on the avoidant subscale and one item on the anxious subscale (e.g., “I do not often worry about being abandoned”) are reverse scored. A sample item from the avoidant subscale is, “I try to avoid getting too close to my partner.” A sample item from the anxious subscale is, “My desire to be very close sometimes scares people away.” A reliability analysis of the ECR yielded a Cronbach's alpha of 0.792 for the avoidant subscale and 0.680 for the anxious subscale, indicating stronger internal reliability among the avoidant subscale items in comparison to the anxious items.

Technology and Intimate Relationship Assessment (TIRA). The TIRA (Campbell & Murray, 2015) was used to measure the perceived effect of technology on intimacy. The scale is made up of two subscales (intimacy enhancing or reducing), each with 11 statements. The TIRA is scored on a 5-point Likert-scale, ranging from 1(*strongly disagree*) to 5(*strongly agree*), in which the participant indicates the extent to which they agree the statement describes their relationship. A sample item from the intimacy enhancing subscale is “My use of technology affects my romantic relationship positively.” A sample item from the intimacy reducing subscale is “Sometimes, I feel like my partner uses technology to check up on me.” A Cronbach's alpha of 0.729 was found for the intimacy enhancing subscale and 0.762 for the intimacy reducing subscale.

Multidimensional Jealousy Scale (MJS). The MJS (Pfeiffer & Wong, 1989) was used to measure jealousy. The scale is made up of three subscales, representing three dimensions of jealousy, cognitive, behavioural and emotional. Each subscale is composed of eight statements, giving the scale a total of 24 items. Although, one item from the emotional subscale was removed as it did not apply to romantic relationships, concluding with a total of 23 items for this scale. The cognitive and behavioural subscales are scored on a 7-point rating scale from 1(*never*) to 7(*all the time*), while the emotional subscale is 1(*very pleased*) to 7(*very upset*). The items in the questionnaire were adapted to specifically relate to jealousy in a romantic relationship. A note was included for participants' in same-sex relationships to interpret questions accordingly, as the scale is targeted for heterosexual individuals. Examples of statements include, "I suspect that my partner may be attracted to someone else (cognitive subscale)," "I question my partner about his or her telephone calls (behavioural subscale)," and "Your partner is flirting with someone of the opposite sex (emotional subscale)." A Cronbach alpha score of 0.883 was found for the total 23 items, indicating good internal reliability across the three subscales.

Communication Technology Frequency Scale. The Communication Technology Frequency Scale (see Appendix B) was used to measure three predictor variables, frequency of communication technology used with others excluding the partner, perception of partner's use of communication technology with others excluding the participant and use of communication technology with only the partner. Three subscales are used with a total of 17 items to measure these specific variables. No reliability analyses were conducted on the three subscales due to the nature of what the items are measuring.

Communicating with others, excluding the partner. This subscale specifically measures the participant's frequency of communication technology use with others, excluding their

partner. This subscale includes five items, which focus of the first four items on the frequency of use with different technology platforms (e.g., Facebook, texting, Snap Chat, other). The last item focuses on quantity of use in average time spent per day, to compliment frequency of use.

Scoring options range from 0 (*never*) to 6 (*10 or more times a day*) and for amount of time, *less than 1 hour to 5 or more hours*. A sample item is, “How frequently do you use Snap Chat to communicate with others (excluding stories)?” An overall score of average own platform use will be used in data analyses, which averages scores from each platform, including Facebook, texting and Snap Chat.

Partner communicating with others, excluding participant. This subscale specifically measures the participant’s perception of their partner’s frequency of communication technology with others excluding their self. Five items are included in this subscale that refer to frequency of use among different technology platforms (e.g., Facebook, Snap Chat, texting, other) and average time spent using communication technology per day. Scoring includes a rating scale from 0 (*never*) to 6 (*10 or more times a day*) and for amount of time, *less than 1 hour to 5 or more hours*. A sample item is, “How many conversations with others does your partner have using text messaging?” An overall score of average partner platform use will be used in data analyses, which averages scores from each platform, including Facebook, texting and Snap Chat.

Communication with only the partner. This subscale specifically measures the frequency of communication technology used with only the participant’s romantic partner. This subscale consists of seven items that focus on the use of different technology platforms (e.g., Facebook, texting), sexting and average time spent using communication technology per day. The rating scale used for scoring ranged from 0 (*never*) to 6 (*10 or more times a day*) and for amount of time, *less than 1 hour to 5 or more hours*. A sample item is, “How often do you and

your partner use ‘sexting’ to communicate?” An overall score of average couple platform use will be used in data analyses, which averages scores from each platform, including Facebook, texting and Snap Chat.

Perceived Relationship Quality Components Inventory Modified (PRQC). The PRQC Inventory (Fletcher, Simpson & Thomas, 2000) was used to measure the response variables, relationship satisfaction, intimacy and trust. The scale is composed of four subscales, relationship satisfaction, passion, intimacy and trust. The passion subscale was not used for the study, thus only three subscales with three questions each were used. Each statement is answered on a 7-point Likert-type scale from 1(*not at all*) to 7(*extremely*). A Cronbach’s alpha of 0.942 was found for the relationship satisfaction subscale, 0.800 for the intimacy subscale and 0.835 for the trust subscale. Sample items from the scale include, “How satisfied are you with your relationship,” “How intimate is your relationship,” and “How much do you trust your partner.”

Procedure

Participants were recruited using the online SONA system, a website that posts studies and available time slots for students in Psychology 1000 and some 2000-level courses to sign-up. The sign-up poster on the website included a brief description of the study, approximate time to complete the study and eligibility requirements. After participants signed up for the study on the SONA system, an email was sent to them including the link to access the survey at anytime. Upper year psychology students were also recruited via the class website (OWL) using the sign-up poster, following the completion of recruitment using the SONA system. The students who emailed stating their interest were sent the link to access the survey. Accessing the link brought participants to the survey on Western’s web based survey tool (Qualtrics). Upon accessing the survey link, the informed consent form was read, and then participants clicked a button that acted

as a signature stating they had read the informed consent form and agreed to participate. Participants then completed the demographic form and five scales that took approximately 45 minutes. After completing all scales, participants were given the option to input their email if they would like to further participate in similar research later. A link to the debrief form was added at the end for participants to download. Participants' eligible for bonus marks were able to download the link for the written assignment also included at the end of the survey. Upper year psychology students were able to pick up a five dollar Tim Hortons gift card as compensation at a predetermined location and time following the completion of the survey. Participants were given the phone number for the London District Distress Centre in the debriefing form in case any questions were found to be sensitive to participants.

Results

Demographic Information: Descriptive Statistics of the Sample

Data analysis was first conducted regarding the demographic information about participants' dating history and details of their current romantic relationship. Most of the participants started dating at age 16 ($M= 16.57$, $SD= 1.49$), with a range of 13-21 years of age. The majority of participants were involved in 1-2 serious relationships (93%) within their lifetime ($M=1.48$, $SD= 0.80$), with a range of 1-4 relationships. All participants were required to currently be in a romantic relationship at the time of participation, of which 92 were involved in opposite-sex relationships, and one participant involved in a same-sex relationship. Most participants reported the length of their current relationship to be longer than 12 months ($M=14.88$, $SD= 14.67$), with a range of 3-72 months. Less than half of the sample (30%) reported their romantic relationship as being long distance, which was defined as not seeing your partner, face-to-face, for most days.

Frequencies of Communication Technology Use

Frequencies of communication technology use within and outside participants' relationships were computed to determine a better understanding of the types of platforms used and amount of those uses within the sample. Participants reported their own and partners use outside of their relationship as well as use specifically within the relationship. Frequency of use across platforms including Facebook, texting, Snap Chat, and sexting (couple question only) was reported. A summary of frequencies regarding couple use of different platforms is displayed in a bar graph format in figure 1. The most highly used platform for couple use per day was texting, reported to be used ten or more times a day by 43.5% of the sample. The behavior of sexting amongst couples was also explored with 69% of the sample reporting to sext at least a few times a year with their partner; the majority of those individuals (30%) indicated sexting a couple times a month. Additionally, the use of Snap Chat across all groups was reported as higher than Facebook. As shown in figure 1, in couples, 68% of the sample reported using Snap Chat more than a couple times a month in comparison to 42% regarding Facebook. Participants' indicated a common use of texting to communicate with others (excluding their partner) with 85% of the sample texting at least once or twice a week on average. Overall, frequencies of hour usage indicated that two to three hours on average per day to directly communicate with others in all three groups was the most common frequency amongst individuals (37%), partners (47%) and couples (42%).

Correlations and Gender Differences Among Variables

Correlations were computed among the variables of interest, which are presented in Table 1. Results indicated that several variables were significantly correlated. First, a significant positive correlation was found between age and frequency of sexting, such that older participants

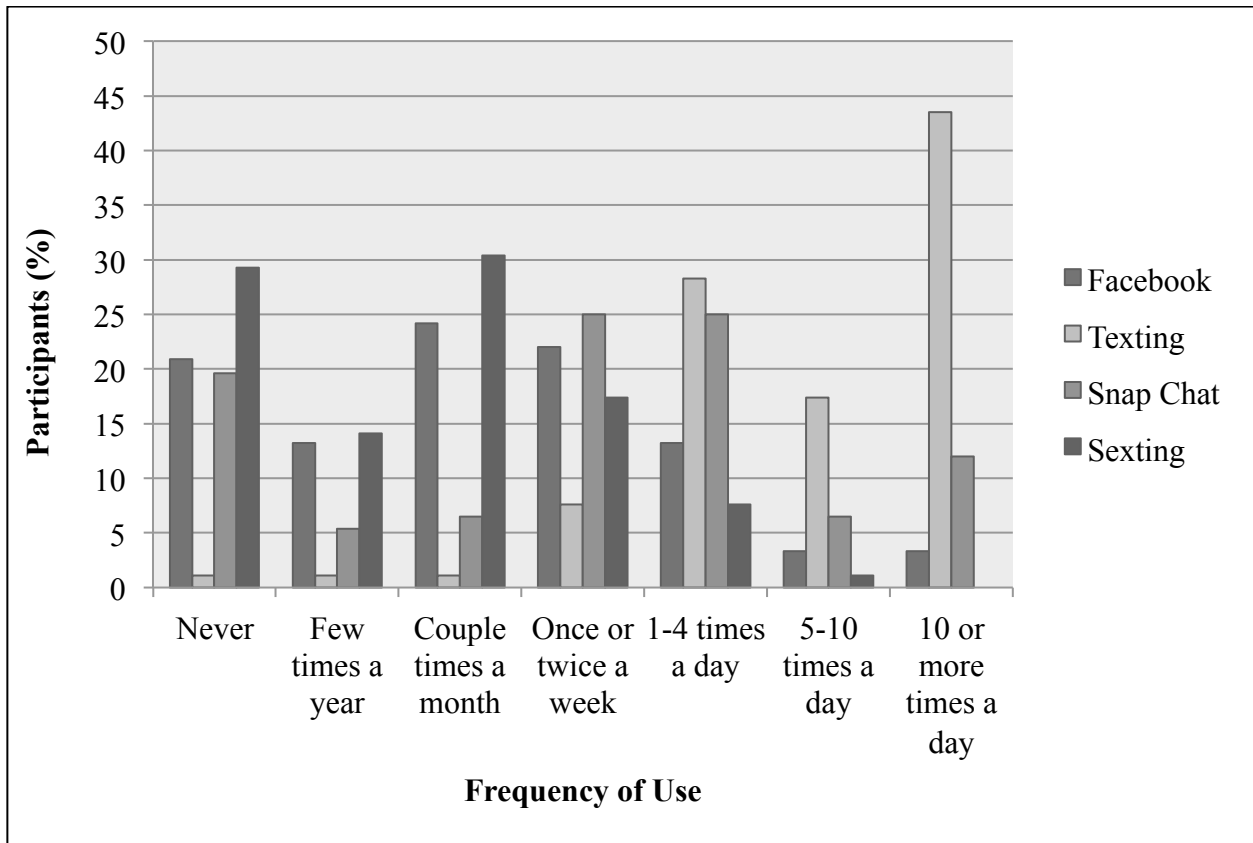


Figure 1. The participants' frequency of different communication technology platforms used within their romantic relationship.

Table 1

Correlations Between Age, Number of Relationships, Couple Platform Use (i.e. Facebook, Texting, Snap Chat), Sexting, Anxious Attachment, Jealousy, Relationship Satisfaction, Technology Perceived as Intimacy-Enhancing, and Technology Perceived as Intimacy-Reducing.

	1	2	3	4	5	6	7	8	9
1. Age	-								
2. Number of Relationships	.35**	-							
3. Couple Platform Use	-.03	.02	-						
4. Sexting	.21*	.03	.21*	-					
5. Anxious Attachment	.16	.21*	.01	.12	-				
6. Jealousy	-.05	.10	.14	.06	.44**	-			
7. Relationship Satisfaction	-.18	-.33**	.03	-.06	-.45**	-.40**	-		
8. Tech. Perceived as Intimacy-Enhancing	.05	.07	.30**	.25*	.29**	.22*	-.18	-	
9. Tech. Perceived as Intimacy-Reducing	.25*	.21*	.23*	.22*	.39**	.48**	-.40**	-.35**	-

Note. * $p < .05$, ** $p < .01$

reported sexting at a higher frequency. A significant positive correlation was also found between age and number of relationships, such that older individuals reported having a higher number of serious relationships. Similarly, number of relationships was also found to significantly correlate with anxious attachment, such that a higher number of serious relationships' related to higher levels of anxious attachment. In contrast, the analysis indicated a significant negative correlation between number of relationships and relationship satisfaction, such that that a lower number of relationships associated with higher levels of relationship satisfaction.

Analysis revealed a significant positive correlation between anxious attachment and jealousy, such that higher levels of anxious attachment related to higher levels of jealousy. Both of these variables were found to negatively correlate with relationship satisfaction. A significant negative correlation was found between anxious attachment and relationship satisfaction, such that higher levels of anxious attachment associated with lower levels of relationship satisfaction. Additionally, a significant negative correlation was found between jealousy and relationship satisfaction, such that higher levels of jealousy related to lower levels of relationship satisfaction.

It was found that couple platform use (i.e. Facebook, texting, Snap Chat) positively correlated with a number of variables, including sexting, technology perceived as intimacy enhancing and technology perceived as intimacy reducing. A significant positive correlation was found between couple platform use and sexting, such that couples that use communication technologies more frequently reported sexting more frequently. The analysis revealed a significant positive correlation between couple platform use and technology perceived as both intimacy enhancing and reducing, such that couples more frequently using communication technology to communicate reported stronger views of technology being intimacy enhancing and technology being intimacy reducing.

Technology perceived as intimacy enhancing also positively correlated with multiple variables, including sexting, anxious attachment and jealousy. A significant positive correlation was found between technology perceived as intimacy enhancing and sexting, such that participants who rated technology as very intimacy enhancing reported higher levels of sexting. In addition, views of technology as intimacy enhancing had a significant correlation with anxious attachment, such that participants with strong views of technology as intimacy enhancing reported higher levels of anxious attachment. A final significant positive correlation was found between technology perceived as intimacy enhancing and jealousy, such that those who view technology as more intimacy enhancing reported higher levels of jealousy.

Technology perceived as intimacy reducing was found to significantly correlate with all variables that were analyzed, including couple platform use as previously mentioned, age, number of relationships, sexting, anxious attachment, jealousy, relationship satisfaction and technology perceived as intimacy enhancing. A significant positive correlation was found between technology perceived as intimacy reducing and age, such that technology was viewed as more intimacy reducing by older participants. Similarly, a significant positive correlation was found between technology perceived as intimacy reducing and number of relationships, such that those who perceive technology as more intimacy reducing have had a higher number of relationships. Also, a significant positive correlation was revealed between technology perceived as intimacy reducing and sexting, such that ratings of technology as more intimacy reducing associated with a higher frequency of sexting. Additionally, technology perceived as intimacy reducing had a significant positive correlation with anxious attachment, such that higher ratings of technology as intimacy reducing associated with higher levels of anxious attachment. A significant positive correlation was found between technology perceived as intimacy reducing

and jealousy, such that higher ratings of technology as intimacy reducing related with higher levels of jealousy. In contrast, a significant negative correlation was found between technology perceived as intimacy reducing and relationship satisfaction, such that those who perceived technology as more intimacy reducing reported lower levels of relationship satisfaction. Finally, a significant negative correlation was found between technology perceived as intimacy reducing and technology perceived as intimacy enhancing, such that higher ratings of technology as intimacy reducing associated with lower ratings of technology as intimacy enhancing.

A series of independent samples t-tests revealed that sex was a significant predictor of past number of serious relationships, $t(91) = 2.22, p < .05$, such that males reported having more relationships in past than females. The findings also indicated sex was a significant predictor of relationship satisfaction, $t(89) = -2.31, p < .05$, such that females reported higher levels of relationship satisfaction than males.

Analytic Plan

The hypotheses of the present study were tested using multiple regression analysis in SPSS. In all of the regression analyses gender and age were entered as control variables in step one, specific predictor variables entered in step two and potential interaction terms to test for moderating effects in step 3; The first regression analysis tested the relationship between the participant's perceived communication technology platform use (i.e. Facebook, texting and Snap Chat) of their partner and jealousy, and the relationship between anxious attachment and jealousy. The moderating relationship between the perceived platform use of the partner and jealousy was also tested.

The second hypothesis was also tested using a second regression analysis. The relationship between the participants communication technology platform use outside of the

relationship and jealousy was tested, as well as the relationship between anxious attachment and jealousy. The moderating relationship between one's own platform use and jealousy was also tested. Specific platforms that make up the average own platform use (i.e. Facebook, texting, Snap Chat) were explored in an additional regression predicting jealousy, but were not included.

The third hypothesis also involved testing for moderation using a series of regression analyses. The third regression analysis tested the relationship between the frequency of couples platform use and technology perceived as intimacy enhancing, and the relationship between anxious attachment and technology perceived as intimacy enhancing. An interaction term was created using the predictor variables to test for moderation of the relationship between couple platform use and technology perceived as intimacy enhancing. A fourth regression analysis tested the relationship between specific platforms (i.e. Facebook, texting, Snap Chat) used by couples and technology perceived as intimacy enhancing, and the relationship between anxious attachment and technology perceived as intimacy enhancing. The fifth regression analysis tested the relationship between couple platform use and technology perceived as intimacy reducing, as well as the relationship between anxious attachment and technology perceived as intimacy reducing. An interaction term was created using the predictor variables to test for moderation of the relationship between couple platform use and technology perceived as intimacy reducing.

The fourth hypothesis was another moderation relationship that was tested with a series of regressions. The sixth regression tested the relationship between technology perceived as intimacy enhancing and relationship satisfaction, as well as the relationship between the frequencies of couples' platform use and relationship satisfaction. The moderating relationship between technology perceived as intimacy enhancing and relationship satisfaction was tested. The seventh regression tested the relationship between technology perceived as intimacy

reducing and relationship satisfaction, as well as the relationship between couple platform use and relationship satisfaction. The moderating relationship between technology perceived as intimacy reducing and relationship satisfaction was tested.

Hypothesis Testing

The first regression analysis was computed to determine whether jealousy could be significantly predicted by the participant's perception of their partner's platform use and anxious attachment. This model was significant, $F(4, 89) = 6.30, p < .001$, and accounted for 19.2% of the variance in jealousy. As shown in Table 2, anxious attachment was a significant predictor of jealousy, indicating that those with anxious attachments reported higher levels of jealousy, while those with more secure attachments indicated lower levels. The participant's perception of their partner's platform use was not a significant predictor (see Table 2, regression 1).

A second regression analysis was conducted to determine whether jealousy could be predicted by the participants' own platform use and anxious attachment. This model was also significant, $F(4, 91) = 7.30, p < .001$, and accounted for 21.7% of the variance in jealousy, more than the previous model. As shown in Table 2, anxious attachment once again predicted jealousy. But, own platform use also was found to be a significant predictor in this regression as well, indicating that participants with higher usage of communication technology platforms with others excluding their partner reported higher levels of jealousy (see Table 2, regression 2). In the third step of the model an interaction term between own platform use and anxious attachment was conducted to explore possible moderation of jealousy, but the interaction term was non-significant, suggesting no moderating effects and was removed from final models. Further regression analyses were computed to test whether any specific platforms used by the participant, including Facebook, texting or Snap Chat could significantly predict jealousy. There were no

Table 2

Regression 1: Predicting Jealousy from Perception of Their Partner's Platform Use

Variable	Beta	SE	t
Gender	-.09	.21	-.83
Age	-.16	.06	-1.51
Partner Platform Use	.03	.08	.29
Anxious Attachment	.48	.08	4.94**

Regression 2: Predicting Jealousy from Participant's Own Platform Use

Variable	Beta	SE	t
Gender	-.10	.20	-.97
Age	-.15	.06	-1.41
Own Platform Use	.19	.08	1.98*
Anxious Attachment	.45	.08	4.73**

Regression 3: Predicting Tech. Perceived as Intimacy Enhancing from Couples Platform Use

Variable	Beta	SE	t
Gender	-.06	.14	-.54
Age	-.02	.04	-.20
Couple Platform Use	.29	.05	2.87**
Anxious Attachment	.30	.05	3.01**

Regression 4: Predicting Tech. Perceived as Int. Enhancing from Couples Specific Platform Use

Variable	Beta	SE	t
Gender	-.08	.14	-.70
Age	-.05	.04	-.41

Anxious Attachment	.30	.05	2.92*
Couple Facebook Use	.28	.03	2.22*
Couple Texting Use	.23	.05	2.14*
Couple Snap Chat Use	.03	.03	.28

Regression 5: Predicting Tech. Perceived as Intimacy Reducing from Couples Platform Use

Variable	Beta	SE	t
Gender	-.12	.16	-1.09
Age	.14	.05	1.31
Couple Platform Use	.22	.06	2.33*
Anxious Attachment	.36	.06	3.74**

Regression 6: Predicting Relationship Satisfaction from Tech. Perceived as Intimacy Enhancing

Variable	Beta	SE	t
Gender	.11	.23	.93
Age	-.17	.07	-1.47
Tech. Intimacy Enhancing	-.27	.17	-2.49**
Couple Platform Use	.12	.09	1.20

Regression 7: Predicting Relationship Satisfaction from Tech. Perceived as Intimacy Reducing

Variable	Beta	SE	t
Gender	.07	.22	.67
Age	-.09	.07	-.80
Tech. Intimacy Reducing	-.40	.14	-3.83**
Couple Platform Use	.13	.08	1.25

Note. * $p < .05$, ** $p < .01$

significant findings to support specific platforms' as uniquely predicting jealousy, thus were not included in Table 2.

The third regression analysis was computed to determine whether the couple's communication technology platform use and anxious attachment could significantly predict technology perceived as intimacy enhancing in the relationship. This model was significant, $F(4, 88) = 4.56, p = .002$, and accounted for 13.9% of the variance in technology perceived as intimacy enhancing in the relationship. As shown in Table 2, couple platform use was a significant predictor of technology perceived as intimacy enhancing, indicating that couples with higher usage of communication technology reported viewing technology as more intimacy enhancing. Anxious attachment was also a significant predictor of technology perceived as intimacy enhancing (see Table 2, regression 3), indicating that those with anxious attachments reported viewing technology as more intimacy enhancing. In the third step, the hypothesized moderation of the relationship between the couples platform use and perceiving technology as intimacy enhancing by anxious attachment was tested. An interaction term of the two predictor variables was created to test this, but the interaction term was non-significant, suggesting no moderating effects.

A fourth regression analyses was conducted to test whether specific platforms (i.e. Facebook, texting, Snap Chat) used by couples and anxious attachment could significantly predict technology perceived as intimacy enhancing. This model was significant, $F(4, 88) = 3.43, p = .004$, and accounted for 14.2% of the variance in technology perceived as intimacy enhancing. As shown in Table 2, anxious attachment was once again a significant predictor in this model. In addition, couple Facebook use was also a significant predictor of technology perceived as intimacy enhancing, indicating that couples using Facebook more frequently to

communicate reported viewing technology as more intimacy enhancing. Texting was also a significant predictor of technology perceived as intimacy enhancing (see Table 2, regression 4), indicating that couples with higher rates of texting to communicate reported viewing technology as more intimacy enhancing. Couple use of Snap Chat was not a significant predictor of technology perceived as intimacy enhancing

A fifth regression analysis was conducted to test the relationship between couple platform use and technology perceived as intimacy reducing, and the relationship between anxious attachment and technology perceived as intimacy reducing. This model was significant $F(4, 88) = 6.96, p < .001$, and accounted for 21.3% of the variance in technology perceived as intimacy reducing. As shown in Table 2, couple's platform use was a significant predictor, indicating that couples with higher usage of communication technology reported viewing technology as more intimacy reducing. Anxious attachment was also a significant predictor of technology perceived as intimacy reducing (see Table 2, regression 5), indicating that those with anxious attachments reported viewing technology as more intimacy reducing.

The sixth regression analysis was computed to determine whether levels of relationship satisfaction could be significantly predicted by technology perceived as intimacy enhancing and the couple's communication technology platform use. This model was significant, $F(4, 88) = 3.08, p = .02$, and accounted for 8.7% of the variance in relationship satisfaction. Technology perceived as intimacy enhancing was a significant predictor of relationship satisfaction (see Table 2, regression 6), suggesting that participants viewing technology as intimacy enhancing reported lower levels of relationship satisfaction. Couples communication technology platform use was not a significant predictor.

A seventh regression was conducted to determine whether levels of relationship satisfaction could be significantly predicted by technology perceived as intimacy reducing and the couple's communication technology platform use. This model was significant, $F(4, 88) = 5.29, p = .001$, and accounted for 16.3% of variance in relationship satisfaction. As displayed in Table 2 (regression 7), technology perceived as intimacy reducing was a significant predictor, indicating that participants viewing technology as more intimacy reducing reported lower levels of relationship satisfaction. Couples communication technology platform use was not a significant predictor.

Discussion

The results of the present study were partially in line with my hypotheses, with most of the predictor variables including own and couple platform use, and perceptions of technology as intimacy enhancing and reducing, uniquely predicting criterion variables including, jealousy, technology perceived as intimacy enhancing and reducing and relationship satisfaction; although the hypothesized moderation of these relationships by anxious attachment and couple platform use were not supported. The results showed that a higher frequency of communication technology used by participants' outside their relationship related to higher levels of jealousy. However, no relationship was found between own platform use and anxious attachment, so the hypothesized moderation was not supported. A significant positive relationship was also found between couple platform use and technology perceived as intimacy enhancing as well as technology perceived as intimacy reducing, such that higher communication technology use within the relationship related to stronger ratings of technology as both intimacy enhancing and reducing. Anxious attachment was also associated with higher ratings of technology as intimacy enhancing and reducing, although it was not found to moderate the relationship. Interestingly,

technology perceived as both intimacy enhancing and reducing negatively associated with relationship satisfaction, such that higher ratings of technology as intimacy enhancing and/or intimacy reducing related to lower levels of relationship satisfaction. Again, no relationship was found between couple platform use and relationship satisfaction, so the hypothesized moderation was not supported. In sum, interactions between technology-related aspects, attachment style and relational qualities are apparent in the emerging adults population. Results suggest that further research is needed to better understand these relationships and consequently the positive and negative outcomes that impact aspects such as relationship satisfaction.

In terms of the frequencies of communication technology use, our results are in line with previous research and further demonstrate the extensive use of technology both within and outside one's romantic relationship. Texting was found to be the most frequently used platform to communicate within the relationship, with 44% of the sample stating they text with their partner 10 or more times a day. This finding is supported through out the literature focused on emerging adults texting use, as well as texting within romantic relationships (Drouin & Landgraff, 2012; Lenhart & Duggan, 2014; Skierkowski & Wood, 2012). Snap Chat, another communication technology platform was shown to be used by 80% of the sample within couples, most commonly used one to four times a day. Sexting was also commonly used among the sample, with 70% of participants stating they engage in sexting with their partner with varying frequencies (30% sext a couple times a month). Research on sexting is increasing, and has mostly shown that sexting is not only common in committed romantic relationships, but also in a variety of relationships such as casual sex and infidelity (Drouin & Landgraff, 2012; Drouin, Vogel, Surbey, & Stills, 2013). However, one study found more than half (57%) of their sample of undergraduate students to not participate in sexting (Gordon-Messer, Bauermeister,

Grodzinski, & Zimmerman, 2013), perhaps suggesting that sexting is most common within romantic relationships. The landscape of communication technology is clearly expanding, with increased usage of platforms such as texting and Snap Chat, which can be used for certain activities such as sexting. Based off these findings, a more comprehensive inclusion of platforms should be used to better measure and explore communication technology use within and outside of romantic relationships in future research.

Own Platform Use, Anxious Attachment and Jealousy

Surprisingly partner's platform use did not uniquely predict jealousy, as past research has suggested that perceiving one's partner to communicate with others increases jealousy within the relationship (Muisse et al., 2009). Instead, one's own platform use did significantly predict levels of jealousy, such that participants with higher frequency of use outside the relationship reported higher levels of jealousy. This may be explained in two different ways, one being that the more one uses communication technology the more opportunities one has to develop jealous feelings based on exposure of potential jealousy evoking posts and pictures, including what friends may be saying about the partner. The other potential explanation is that higher levels of jealousy may motivate an individual to use communication technology more as it provides a way of acting upon those jealous thoughts or emotions (Billedo et al., 2015; Dijkstra, Barelds, & Groothof, 2010). For example, the Facebook platform specifically has shown to be used as a tool for checking on/surveillance of a partner (Marshall et al., 2013; Muise et al., 2009). Furthermore, Muise et al. (2009) suggested the relationship between one's communication technology use and jealousy is bidirectional and acts as a feedback loop with more use contributing to higher levels of jealousy, and more jealousy leading to higher use from wanting to check on the partner.

The significant positive relationship found between anxious attachment and jealousy in this study was expected. Similarly in a study by Buunk (1997), individuals with an anxious attachment style were found to be more jealous in comparison to secure attachments. Moreover, anxious attachment has also been found to positively correlate with specific communication technology platforms, such as Facebook Jealousy (Marshall et al., 2013). Unexpectedly, anxious attachment did not moderate the relationship between own platform use and jealousy, suggesting that attachment style does not influence the negative outcome of jealousy based on communication technology use. Another explanation may be that trust mediates the relationship between communication technology use and jealousy, as those lower in trust have been shown to be higher in Facebook jealousy in a study by Marshall et al. (2013). Those with an anxious attachment style are also shown to experience lower levels of trust (Simpson, 1990), supporting the finding regarding anxious attachment and jealousy. Thus, the relationship between communication technology and jealousy may occur bi-directionally and be influenced by trust as a third variable.

Couple Platform Use, Anxious Attachment and Technology Perceived as Intimacy Enhancing and Intimacy Reducing

Individuals who more frequently used communication technology within their relationship reported viewing technology as more intimacy enhancing as well as reducing. This finding seems logical based on the general findings that communication technology use in relationships can have both positive and negative influences (Campbell & Murray, 2015; Coyne et al., 2011; Murray & Campbell, 2015). The more communication technology is used within the relationship, the more likely positive or negative influences may take place. Based on this idea, it is likely participants using communication technology more often are aware of how it may help

or create problems when it comes to relationship intimacy. For example, those using technology to communicate with your partner when they are not with you (Pettigrew, 2009), or in long distance relationships (Billedo et al., 2015), would be aware of how technology enhances intimacy. In contrast, possible miscommunication or interpretation may occur due to lack of social cues when discussing problems (Murray & Campbell, 2015), in which individuals would realize technology can also have limitations. While certain problems with technology are due to use outside of the relationship (e.g., flirting with someone else), this finding makes it clear that the actual use of technology within the relationship can also have both positive and negative effects on intimacy.

A significant positive correlation also existed between anxious attachment and technology perceived as intimacy enhancing and reducing, such that higher levels of anxious attachment related to viewing technology as more intimacy enhancing and reducing. This finding was somewhat expected, as studies have shown greater use of communication technology to correlate with intimacy for those with anxious attachment styles (Morey et al., 2013). Additionally, one of the benefits of communication technology is that it can provide more continuous and instant connection with a partner, allowing those with anxious attachments to meet their desired needs of intimacy and closeness with their partner.

However, it was not expected that higher levels of anxious attachment would positively associate with viewing technology as also more intimacy reducing. However, based on the positive relationship between anxious attachment and jealousy found in the present study, those with anxious attachments may be aware that technology makes them feel more jealous, or allows them to take part in jealousy behaviours (e.g., snooping) which are intimacy reducing. Also, anxious attachment was non-significant when tested as a moderating variable for the relationship

between couple platform use and technology perceived as intimacy enhancing and reducing, not supporting the hypothesized moderation. This finding suggests that this relationship occurs in both insecure and secure attachments, making sense as literature has shown positive and negative influences of technology experienced in typical secure relationships (Coyne et al., 2011). Although, perhaps the types of positive and negative influences may differ based on attachment style, which future research should investigate.

Perceptions of Technology as Intimacy Enhancing and Reducing, Couple Platform Use and Relationship Satisfaction

Views of technology as more intimacy enhancing and reducing associated with lower levels of relationship satisfaction, but couple use did not significantly predict relationship satisfaction. The finding that no relationship exists between couple platform use and relationship satisfaction may suggest that relationship satisfaction is more associated with perceptions of technology use and not the actual frequency of communication technology use in the relationship. Moreover, perceptions being important could mean that quality of communication technology use in relationships is more important than actual quantity; as some relationships may be more dependent on technology due to long distance (Billedo et al., 2015) in comparison to a couple living together. Alternatively, couple platform use may not have significantly predicted relationship satisfaction as a result of using only three items to assess relationship satisfaction; a more multidimensional scale may have revealed more differences.

The negative relationship between perceptions of technology and relationship satisfaction may be explained by how these perceptions are used when resolving relationship conflicts. For example, individuals may try to rely on technology to solve intimacy issues such as having less time to spend together. Although, technology may not be able to solve the intimacy issue

independently, resulting in lower levels of relationship satisfaction as the problem would still occur. Contrary to perceptions of technology as intimacy enhancing, individuals perceiving it as intimacy reducing may blame technology for an intimacy issue. Thus, when in conflict with a partner about not feeling connected, they may blame it on being distracted by a cell phone, when perhaps there are alternative more in-depth reasons for the lack of intimacy in the relationship, thus resulting in lower levels of relationship satisfaction. In conclusion, one possible explanation for this unexpected finding is that overreliance or blame of technology for intimacy issues may be a result of technology perceived as intimacy enhancing and reducing, thus leading to unhealthy conflict resolution and lower levels of relationship satisfaction. Future research should further examine this possibility by using number of technology related relationship problems as a third variable to mediate the relationship.

General Conclusions

The present study allows for a number of conclusions to be drawn based on the findings. First, a possible bidirectional relationship may exist between one's own uses of communication technology outside of the relationship and jealousy. This relationship may act as a feedback loop in which jealousy leads to more communication technology use (e.g., snooping), and more use develops higher levels of jealousy (e.g., exposure to suspiciously interpreted information). Next, the findings also suggest that those who utilize communication technology more perceive it as both intimacy enhancing as well as reducing. Therefore, the more experience a couple has with using communication technology the more aware they become of the benefits and drawbacks it has on the relationship, regardless of attachment style. However, while aware of the positive and negative influences of technology, these perceptions still relate to lower levels of relationship satisfaction. Thus, having strong views of technology's impact within relationships may promote

partners' overreliance or blaming of technology when relationship issues occur, not solving a problem that may be explained by other factors.

Practical Implications

These findings have practical implications in further understanding technology's influence on romantic relationships, so as to promote more positive technology usage within romantic relationships. Communication technology can be used and perceived in various ways that can influence relational variables such as jealousy, relationship satisfaction, intimacy, and trust as shown in the present study. A tradeoff seems to occur in the general usage of communication technology, and understanding if the positive impacts outweigh the negative impacts is important in deciding on level of usage. Additionally, the findings also suggest that those who do engage in higher usage of communication technology are aware of these positive and negative influences on their relationship. Thus, more discussion between partners about the actual usage of technology within the relationship and discussing boundaries or guidelines may aid in buffering the negative influences.

It must also be further understood that depending on an individual's characteristics and personality (e.g., attachment style), preferences of how technology is used within in a relationship can change and consequently the possible positive and negative influences may also change. This further emphasizes the importance of actual discussion of communication technology use about both quantity and quality of use, in trying to reap the benefits of technology while also reducing the disadvantages. Findings also suggest that having a neutral attitude towards the influence of technology on intimacy may be best for relationship satisfaction, such that potential blaming or relying on it in regards to intimacy in a relationship is problematic. This neutral attitude might be individual's viewing technology as a tool in which

assists communication in the relationship, but not the only tool for healthy communication.

Knowledge regarding the complex interactions of technology use within romantic relationships should be shared in high school programs promoting healthy relationships, as well as utilized by couple and family therapists. Relationship issues brought up in couple/family counselling sessions may be related to technology perceptions and actual use, thus therapists should be equipped with the knowledge of how technology influences relationships to best advise couples and families.

Potential Limitations

A diverse sample is always ideal, although not always possible when limited to a specific population for recruitment. A potential limitation of the present study was the large gender discrepancy within the sample; as recruitment was voluntary, this was difficult to control.

Approximately three quarters of the sample (75%) that participated were female, relative to male (25%). This unequal gender representation may have been detrimental in generalizing findings to apply to both partners in a heterosexual relationship. Additionally, only one of the 93 participants was in a same-sex relationship, limiting the understanding of potential differences in technology use and generalizability to all types of romantic relationships.

Another potential limitation to the present study is accuracy of answers to questions regarding frequency of communication technology use, and overall time estimation of this use. Research has shown that when retrieving memories such as how often you use Facebook per day, sometimes they may be distorted, and thus inaccurate (St Jacques & Schacter, 2013). This memory fault as well as potential social desirability bias of not wanting to seem 'addicted' to technology or seem jealous may have misconstrued participants' answers to questions regarding frequency of time estimation of communication technology use, as well as items regarding

jealousy. Thus, future research may benefit from actually tracking technology usage to receive the most accurate quantitative data.

Future Research

Future research on communication technology and romantic relationships should further explore the qualitative use of communication technology to better understand the context of the quantitative use. For example, gender differences based on the quality of use would be beneficial, as research has shown male texting frequency to be negatively associated with relationship stability, in contrast to a positive association with females texting (Schade, Sandberg, Bean, Busby, & Coyne, 2013). Additional context would be needed to understand the different impacts of texting and other platforms on males in comparison to females. Also, having participants describe the purpose for use of specific platforms would bring further understanding to why research has shown use of platforms like Facebook to specifically associate with jealousy (Marshall et al., 2013; Muise et al., 2009). Differences between long distance and close relationships have started to be examined, but only so far in terms of jealousy and use of social networking sites (Billedo et al., 2015). Quality of communication technology use amongst those in long distance relationships versus those who are not, and how technology may provide different advantages and disadvantages between the two groups is another way in which quality of use may be investigated.

Future research should also examine differences amongst attachment styles and how technology is used and viewed within the relationship. Specifically, looking at the differences in how technology is used within relationships and technology-related problems that are occurring. In terms of enhancing the present study for future research, it would be beneficial to actually have participants track their communication technology usage for a period of time to improve

accuracy for questions about frequency. Also, having both partners complete the study would be interesting as perceptions of each others use can be investigated in comparison to actual use, and how attachment styles may influence differences between the perceptions and actual use.

Conclusions

The present study offers further insight into the actual use and perceptions of communication technology use in association with romantic relationships. The results reiterate what other research has shown, that higher use of technology by oneself can have negative outcomes, such as jealousy. Also, awareness of both the advantages and disadvantages of technology does occur if used more within the relationship, although this awareness may not necessarily help in reducing negative impacts such as lower relationship satisfaction. Overall, the rapid expansion of different types of communication technology indicates a need for further understanding of the impact of technology on romantic relationships. Research is needed to discover strategies that can mitigate the negative impact of technology, such as having conversations about technology use, creating guidelines for use in the relationship and understanding that technology is only a tool to assist communication, while still maintaining and improving the positive influences of technology on relationships. This study contributes to the growing body of research on perceptions and use of communication technology, attachment styles and its influence on romantic relationships; thus offering insight into promotion of healthier communication within romantic relationships.

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Appendix A

Demographic Form

1. Age: _____
2. Ethnicity: _____
3. Gender: male female other
4. Gender of partner: male female other
5. How long have you been in this romantic relationship? _____
6. Would you consider your current romantic relationship to be a long-distance relationship? (long distance defined as: you cannot see your partner, face-to-face, for most days.) yes no
7. How many serious romantic relationships have you had so far in your life? _____
8. At what age did you have your first serious romantic relationship? _____

Appendix B

Communication Technology Frequency Scale

Scale for all questions (excluding 5, 10, 18):

*0 – Never 1 – a few times a year 2 – couple times a month 3 – once or twice a week
4 – 1-4 times a day 5 – 5-10 times a day 6 - 10 or more times a day*

Scale for questions 5, 10 and 18:

0 – less than 1 hour 1 – 2-3 hours 2 – 4-5 hours 3 – 5 hours or more

Communicating with others, excluding the partner

1. How frequently do you use Facebook to communicate with others? (E.g., NOT scrolling or viewing pictures/statuses without comment towards a person)
2. How many conversations with others do you have over text (e.g., I talked to Emily, John, Lisa today = 3)?
3. How frequently do you use Snap Chat to communicate with others (excluding stories)?
4. How often do you use other forms of online communication to communicate with others (e.g. Twitter, Skype)? List other forms: _____
5. How many hours per day, on average, do you spend using on-line communication to communicate with others (SNS, texting, etc.) such as those listed above?

Partner communicating with others, excluding participant

6. How frequently does your partner use Facebook to communicate with others (e.g. NOT scrolling or viewing pictures/statuses without comment towards a person)?
7. How many conversations with others does your partner have using text messaging?
8. How frequently does your partner use Snap Chat to communicate with others (not including stories)?
9. How frequently does your partner use other forms of online communication to communicate with others (e.g. Twitter, Skype)? List other forms: _____
10. How many hours per day, on average, does your partner spend using on-line communication (SNS, texting, etc.) such as those listed above?

Communication with only the partner

11. How often do you and your partner communicate face-to-face and/or talk over the phone?
12. How often do you and your partner use Facebook to communicate?
13. How many conversations do you and your partner have over text messaging?
14. How frequently do you and your partner use Snap Chat to communicate?
15. How often do you and your partner use 'sexting' to communicate?
16. How frequently do you and your partner use other forms of online communication (e.g. Twitter, Skype)? List other forms: _____
17. How many hours per day, on average, do you spend using on-line communication (SNS, texting, etc.) such as those listed above, excluding question #11?