THE IMPACT OF TECHNOLOGY USE ON COUPLE RELATIONSHIPS: **A NEUROPSYCHOLOGICAL PERSPECTIVE**

Christina Leggett¹ & Pieter J Rossouw²

Abstract

We are in the midst of an Internet revolution and entering an era of enhanced digital connectivity (Hoffman, Novak, & Venkatesh, 2004). The increasing use and accessibility of technology today allows humans to engage and disconnect continuously during face-to-face interactions. Technology is not only used in workspaces but in everyday social relationships as well. The impact of technology use on couple relationships from a neuropsychological perspective has not yet been explored, however. This study investigated the use of television (TV), mobile phones, computers, and laptops in a sample of 21 couples to assess how this impacts on an individual's sense of safety, control, and attachment. It was found that using a laptop while in the presence of a partner, but without engaging/interacting with them, was associated with a couple's negative perception of the relationship, but this effect was not found in relation to mobile, computer, or TV use. Conversely, it was found that couples using technology together while engaging/interacting was linked to positive perceptions about their relationship. This was found most specifically in TV use. It was concluded that technology may enhance or hinder couple relationships depending on the couple's ability to manage, monitor, and reflect on its use.

 School of Psychology, The University of Queensland
School of Psychology, School of Social Work and Human Services, The University of Queensland; Director, Mediros, Clinical Solutions; Director, Institute of Neuropsychotherapy

Correspondence concerning this article should be addressed to Dr. Pieter Rossouw, Director Mediros Clinical Solutions, PO Box 6460, St Lucia, Australia 4067. pieter@mediros.com.au

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The Impact of Technology Use on Couple Relationships: A Neuropsychological Perspective

From the moment we are born, we as humans are surrounded by an external environment that consists of other beings. This may include a community or caregiver/s who play a part to increase our chances of survival in the world. Cozolino (2006) observed there is safety in numbers and larger social groups. Our brains are also developed in such a way that we are able to form social relations, respond to social cues, and integrate with our surroundings (Grawe, 2007). This process can be seen in the expansion of the cortex in primate brains, which allows us to respond to a large variety of challenges across diverse environments (Cozolino, 2006). Regardless of the context of our external environment, human beings strive to connect with others in order to survive, develop and thrive within the social world (Siegel, 2010). This requires the development of intricate connections within the brain, which consists of billions of neurons (Grawe, 2007). Neurons are, by nature, social: They shun isolation and depend on their neighbors for survival (Cozolino, 2006). Neurons interconnect and build pathways in our brains. In response to one's individual experiences, this leads to the development of neuronal pathways that determine our feelings and behaviors. Not only does this occur within our individual brains, but-like a wireless network-our neurons have a way to connect with other brains as well. This network, known as the mirror neuron system, was originally discovered in macaque monkeys when researchers observed neurons firing in the prefrontal cortex of a monkey's brain when it performed a particular action, and observed the same process occurring in the same region when the monkey watched the same action in another monkey (Rizzolatti, Fadiga, Gallese, & Fogassi, 1996). Subsequent research has also demonstrated the same system in the human brain (Kilner, Friston, & Firth, 2007; Yuan & Hoff, 2008).

The more we feel connected to another, the more likely it is that our neurons fire together, leading to repetition of behaviors and the strengthening of neuronal pathways. Although we cherish our individuality, we live in constant relationships with others who participate in stimulating neuronal pathways and regulating or dis-regulating our emotions, thoughts, intentions, and behavior (Cozolino, 2006). Advances in technology, and the increase in its use in everyday life, not only in the office, but socially and in the home environment (Hertlein, 2012), suggests a need for social connection and attachment; however, the impact of the frequent use of technology between couples within their relationship is not yet known (Hertlein, 2012). According to Hertlein, increasing technology use may create difficulties for couples attempting to inhibit problematic phone usage and set clear boundaries. Further, some partners may feel more comfortable expressing certain aspects of their personality (e.g., vulnerabilities) only via social media or online forums, thus creating a greater divide between couples (Cooper, Galbreath, & Becker, 2004). For example, Cooper et al. (2004) indicated that men have been shown to use the Internet to express behaviors (e.g., sexual chatting) that they feel they cannot express in their face-to-face relationships. The Internet has the potential to blur the boundaries between online social relationships and face-to-face relationships; recent research has also explored the blurred boundaries between work and couple/family relationships (Campbell & Ling, 2009. Some researchers have proposed that blurred boundaries due to the overuse of technology have a negative impact on social relationships (Galinsky, Kim, & Bond, 2001; Weil & Rosen, 1997). Others have found that negative work issues extended via technology use into family life is related to increased distress and decreased family satisfaction (Chesley, 2005). Contrasting research has shown, however, that technology use can provide flexibility regarding working arrangements, which reduces relationship conflict (e.g., Hill, Hawkins, Ferris, & Weitzman, 2001; Valcour & Hunter, 2005). In addition, Campbell and Ling (2009) found that frequent mobile phone use contributes to intimacy, and that frequent connection via the mobile phone allows for the sharing of a person's activities and whereabouts to their partner, which enhances connections between couples. Thus far, therefore, research has suggested both that problematic phone use leads to blurred boundaries within relationships, and that it can enhance connections between couples. The impact of technology on satisfaction, feelings, and perceptions of the relationship has not yet been explored.

Developing a Connection

Human infants, unlike some animals, are born in complete dependency on their primary caregivers. During this time, developing a bond and connection with caregivers allows the infant's brain to grow, adapt and be shaped by specific experiences, and survive. Infants have the ability to detect and explore their caregivers from their smell, taste, feel, and facial expressions. In this way they experience the caregiver's presence, which becomes synonymous with safety. Through discovering their caregivers, a connection is formed, and the infant then survives, based on the abilities of the caretaker to detect the needs and intentions of those around them (Cozolino, 2006). For humans and other primates, successful relationships are an indication that we have adequate food, shelter, and protection, and our basic needs will be met. Striving to meet our basic needs requires a process of consistency regulation (Grawe, 2007). This process continues into adult relationships throughout the lifespan.

Consistency Regulation and Congruence

Grawe (2007) regards consistency as a core principle of mental functioning. Humans strive for consistency and congruence to fulfil basic human needs. Consequently, if the condition of striving for consistency is compromised, or even violated, individuals are unable to satisfy their basic needs, thus leading to patterns of protection for survival. Ongoing avoidant patterns of protection result in mental un-wellness (psychopathology). From a neuropsychological point of view, such patterns are the result of the survival response (Grawe, 2007). The survival response is a protective system that ensures safety (Rossouw, 2013). Ongoing activation of the survival response leads to robust neural activation in the primitive neural areas (i.e., the limbic system), which, in psychotherapeutic terms, is referred to as a pattern of avoidance. Patterns of approach, on the other hand, are activated when individuals are surrounded by an enriched environment (Cozolino, 2006; Kandel, 1998). Enriched environments enhance safety, which encourages cortical blood flow to the frontal parts of the brain. When blood flow moves away from the limbic system and into the frontal parts of the brain, individuals are able to function as a whole-meaning that they can think, problem solve and communicate, rather than staying focused in the primitive neural areas (fight or flight for survival). Individuals in an enriched environment are more likely to develop patterns of approach than patterns of avoidance.

Striving for consistency is a way in which humans can safely maintain their goals and fulfil important needs. Once individuals have learned one way of being, they are more likely to repeat it as the process becomes predictable and safe. On the other hand, a situation that becomes unpredictable and inconsistent with our expectations leads to cognitive dissonance, a process whereby emotional distress arises (Grawe, 2007). Inconsistency as described by Grawe is a state that humans strive to avoid, and the human mental system has developed many mechanisms to avoid or remove it. How this relates to couple relationships is that conflict can occur when there is inconsistency tension. If one partner strives for consistency to have their needs met in one way, for instance, and the other partner strives to meet their own needs in another way, there is inconsistency and incongruence in the relationship. The couple's needs become compromised, or even violated, leading to distress and the development of avoidant patterns.

Approach and Avoid Patterns

The basis for developing approach and avoidance patterns occurs as an individual strives to meet basic needs. From birth, the limbic structures (the emotional center) of infant brains constantly scan the environment for cues to danger, discomfort, and risk. In order to feel safe, therefore, and for the stress response in our brains to be regulated, infants look toward their primary caregivers to provide them with a safe and enriched environment to fulfil their basic needs (Rossouw, 2011); but if these needs are compromised or violated, avoidant patterns are developed as a way to protect the self. Grawe (2007) suggests that avoidance goals (i.e., striving to avoid an unpleasant event) require constant control and focused attention-in other words, a person is unable to relax and is constantly scanning the environment for danger or inconsistency. Conversely, when approach patterns are developed, individuals are more likely to approach their goals without a sense of anxious tension. Avoidance goals do not permit efficient goal pursuit or real goal attainment. Feinberg (2009) further suggested that neural responses of protection and avoidance may form as a result of trauma (the violation of a basic need), whereas approach patterns and growth are likely to occur due to positive experiences.

Basic Human Needs

Mental wellness requires healthy neuronal development in a safe and secure environment so that approach patterns rather than avoidance patterns can develop, which in turn facilitates healthy adult relationships. In order to achieve this, humans display four basic needs that must be fulfilled from the time of their birth (Grawe, 2007). These are

- the need for secure attachment;
- the need for orientation and control;
- the need for self-esteem enhancement and self-esteem protection; and
- the need for pleasure maximization and distress avoidance.

According to Grawe, violations of these needs lead to dysfunctions in brain development and social interactions. For the purpose of this study, the needs for attachment and control are the focal point, as these are the most prominent of the four basic needs. Although individuals have a need for self-esteem enhancement and pleasure maximization, these needs cannot be met without first meeting the need for attachment and control.

The need for secure attachment. The need for attachment can be regarded as the empirically most substantiated basic need, especially with regard to its neurological foundation (Grawe, 2007). Attachment describes our unique human need to form and maintain lasting relationships, not only with our caregivers but also relationships throughout our lifespan (Harrison, 2003). The theory of attachment, developed by John Bowlby in the 1960s, indicates that the quality of the attachment relationship forms the basis for emotional development (Colmer, Rutherford, & Murphy, 2011). The core postulates of attachment theory are set out in Bowlby (1973) as follows:

- 1. When an individual trusts that an attachment figure will be available when needed, then this individual will be less likely to experience intensive or chronic anxiety than a person who does not have this trust.
- 2. Trust in the availability of an attachment figure, or the lack thereof, develops prior to adulthood, little by little, during infancy, childhood, and adolescence, and whatever expectancies develop during these years tend to remain relatively unchanged for the rest of life.
- 3. Expectancies that the primary caregiver will be available reflect actual experiences.

When the attachment need is violated or not met, children and adults tend to develop insecure and avoidant attachment styles within relationships. One of the side effects of an insecure attachment is poor emotional regulation because the infant did not learn effective emotional regulation with his/her own primary caregiver. Following Bowlby's attachment theory, a classic lab procedure, the Strange Situation, was devised by Mary Ainsworth in the 1970s. The Strange Situation Test was the first standardized observational procedure designed to explore attachment patterns (Ainsworth, Blehar, Waters, & Wall, 1978). Using this method, children between the ages of 11 and 20 months were observed in situations where they were first separated for a few minutes and then reunited with their mothers. Their reactions to the separation and being united were observed, and from this Ainsworth identified four attachment patterns termed secure, insecure-avoidant, insecure-ambivalent, and

insecure-disorganized, described below.

Secure attachment. Children were observed to react with distress to separation from their mothers and immediately sought proximity upon her return. Infants were soothed by their mothers when they were reunited.

Insecure and avoidant attachment. These children avoided proximity after being separated from their mothers and showed no signs of distress upon separation. Rather than seeking proximity, these children remain distant without exposing themselves to the possibility of further harm. Although this is a protective mechanism to survive, ongoing avoidant patterns lead to poor positive satisfaction of the attachment need (Grawe, 2007).

Insecure and ambivalent attachment. These children displayed anxious behaviors when separated from their mothers. They became preoccupied with the relationship after the separation and did not pursue other activities in the room. Upon the return of their mothers they would fluctuate between seeking proximity and an aggressive rejection of contact. Children in this category learn to associate closeness with worries of losing the attachment figure, leading to fears of being alone.

Insecure and disorganized/disorientated attachment. This attachment style is less common than the previous three. In this condition, children respond to separation from and return of their caregiver with bizarre behaviors. These reactions are the result of severe violations of the attachment need due either to abuse by the primary caregiver, or their absence.

Regardless of the attachment style one develops from early childhood and into adulthood, the underlying drive is to fulfil the need to feel safely attached to another. If our attachment and emotional development is compromised, our thoughts, state of mind, emotions, and immunological functioning become inconsistent with well-being and healthy long-term survival (Cozolino, 2006). Emotional development continues throughout the lifespan but is rooted in the earliest experiences of attachment with caregiver/s. According to Cozolino (2006), children engage in a pattern of insecure attachment if their carer abuses, neglects, or abandons them. These actions send a message to the child that the world is unsafe and dangerous, and the child's brain consequently becomes shaped in a way that protects itself, leading to patterns of avoidance rather than approach. On the other hand, infants surrounded by an enriched environment in close proximity to their primary caregivers encourages neural proliferation and enhanced cortical blood flow to the pre-frontal cortex (Grawe, 2007), leading to the development of approach patterns in the brain. Effective neural connections in open firing patterns are essential for effective neural development, enhanced memory systems, and a sense of well-being (Rossouw, 2012a). A study by Luby and colleagues (Luby et al., 2012) explored the link between children in enriched environments (maternal nurturance) and hippocampal volumes. The hippocampus is the structure in the brain that most closely aligns to memory formation-large hippocampal volume suggest healthy memory systems, whereas hippocampal atrophy can be linked to depression (Sheline, Mittler, & Mintun, 2002). In this study, Luby et al. measured the brains of 92 early school aged children and found that maternal support (i.e., an enriched environment) was strongly predictive of larger hippocampal volume compared to children who were not raised in an enriched environment. They also found that hippocampal volume was greater in children who were not depressed than it was in children who were depressed.

The influence of the external environment on brain development and behavior has been studied in non-human primates. Disturbances in attachment relationships in rhesus monkeys were investigated in a study by Stephen Suomi (1999) who found that when the monkeys were reared without the presence of their mothers, they tended to be retarded in their play and social contact behavior and responded more sensitively to being socially isolated, both in terms of their behavior and in terms of their stress hormone and noradrenergic neurotransmitter release. These responses were present over the long term, into adolescence and adulthood.

Similar findings extend to studies on humans. A study conducted by Chugani et al. (2001) explored brain dysfunction and social deficits in children between the ages of 7 and 11 years who had been adopted out from Romanian orphanages. Many of these children were placed in an orphanage within the first month of life. As the carers in these facilities were few, at a ratio of 10:1, the infants spent 20 hours a day in their cribs isolated from others. As childhood social deprivation on brain function in humans had been largely unexamined, Chugani and colleagues aimed to examine the neurological effects of such isolation on children. To do this, they scanned the brains of ten children adopted out of the Romanian orphanages using positron emission tomography (PET). The neuropsychological assessment of these orphans revealed mild neurocognitive impairment, impulsivity, and attention and social deficits. In terms of survival, a lack

of social interaction in orphanages has been shown to lead to alarming death rates, and it was not until the children were held, rocked, and allowed contact with one another that their survival rate improved (Blum, 2002). Another study conducted by Zeanah, Smyke, Koga, and Carlson (2005) examined children who were raised with little social interaction in another Romanian orphanage. Ratings from caregivers' reports and the Strange Situation Test revealed that children raised in these circumstances were at a high risk of severe disturbances in attachment and related social and behavioral problems. These studies shed light on the importance of secure attachment and how the external environment can shape the way these needs are met, impacting and altering brain development.

The need for orientation and control. According to Epstein (1990), the need for orientation and control is the most fundamental of human needs. Our need for control is satisfied when a maximum number of options are available to us. Conversely, this need is violated when our options are no longer available-if we experience a severe flood, for example, our options decrease and control over our environment is compromised. Although we are still able to survive, if our need for control is violated, this reduces our sense of orientation. In early childhood, control is linked to attachment and the relationship with the primary caregiver. Further, when an individual is introduced to a safe and enriched environment, their options and sense of orientation increase, leading to an increased sense of control and mental wellness.

Control involves the processes of controllable and uncontrollable incongruence (Grawe, 2007). Incongruence refers to the interaction between the individual and his/her environment. In adult relationships, incongruence may occur in a long-distance relationship, for example, when the number of options the couple has to feel or be attached to one another is decreased, which leads to a decreased sense of control. This is known as uncontrollable incongruence. If the couple have plans to reunite and have the means to connect via technology consistently, thereby maximizing their options, their sense of control over the situation would increase. This is known as controllable incongruence. In another example, if a couple were sitting together in the same room and one person is consistently using technology without engaging with the other, this may compromise that person's sense of attachment and safety. As one person is striving to feel attached while the other person engages with technology, uncontrollable incongruence is enhanced, leading to distress within the relationship.

Technology Use and Couple Relationships

Hoffman, Novak, and Venkatesh (2004) stated that we are in the midst of an Internet revolution and entering an era of enhanced digital connectivity. The consequent increase in the use of social media and technology can either enhance or hinder our need for attachment and control. Computers, mobile phones, and the Internet have an enormous influence, not only on how we function at work but also on how we communicate and interact outside the office (Kraut, Brynin, & Kiesler, 2006). According to the Australian Bureau of Statistics (ABS, 2009), in 2009, 74% of Australians aged 15 years and over accessed the Internet at least once in the previous 12 months. By 2013 this figure had increased to 84% (ABS, 2013). The main social sites used are Facebook, Twitter, and YouTube. Not only is social media and technology used for social connection, technology is increasingly used for education and the sharing of information, which globally aims to make the world more accessible than previously (Selwyn, 2013). With the increasing use of technology to achieve social connection, questions arise as to what the implications are for face-to-face interactions within couple relationships. Hertlein and Blumer (2013) posited that a technological revolution has intruded into couple life in subtle ways, where couples are not always aware of the changes that have emerged in their relationships. They began their book The Couple and Family Technology Framework: Intimate Relationships in a Digital Age with the following account:

I (K. H.) was having dinner at a local restaurant with a colleague. As we sat and talked, I could not help but notice a couple sitting together at a table just behind my companion. They appeared very much in love: They spent some time holding hands, facing each other gazing in each other's eyes, and smiling at one another a good proportion of the time. Then, as the dinner continued, I noticed the emergence of their mobile phones. At first, the involvement of the phones seemed rather innocuous: One person brought out a phone to show his partner something, and the phone was quickly put away. As I continued to observe them, new media made an increasing presence in the date. After taking photos of the meal and making it most of the way through dinner, one of the phones made another appearance at the dinner table. One partner offered the phone to the other to view something on the screen. This continued for several

minutes. By the end of the meal, their phones had made another appearance, but in a different way. The couple stopped talking to one another; one partner was sitting at the table, and the other was positioned with her body away from the table and, consequently, her partner. Each had a cell phone in hand, and they were seemingly not engaged with one another. They both appeared to be scrolling through options and reading things on their independent screens. This continued for several minutes, and they appeared so disconnected to me that I wondered if I had missed an argument and they were no longer speaking. After the check was paid, however, they put away their phones, smiled at one another, and left the restaurant quietly, hand in hand. (p. 1)

This observation illustrates the need for connection-not just while being in the presence of another but also being present with that person. According to Siegel (2010), presence is a process whereby we remain open and focused on the other without external or internal distraction. When we are present with another, that person feels connected and safe. Questions arise as to whether, in a relationship, presence should or should not be maintained at all times. Nevertheless, if presence is not maintained due to technological distraction, how long can couples remain satisfied in their relationships without feeling heard or connected? Individuals can develop strong relationships with mobile phones, which combine communication, computing abilities, and personalized applications (Lang & Jarvenpaa, 2005), and the advancement of technology, particularly with the mobile phone, has introduced a process of distraction and separation in couple relationships (Hertlein, 2012). Lang and Jarvenpaa described an engaging/disengaging paradox in relation to mobile phone use, where the mobile phone provides a means to disengage regularly from face-toface interactions with increasing SMS, email, and social media technology. Mobile phone users frequently disengage from meetings, face-to-face conversations, parties, and family in order to engage with their devices. On the other hand, technology has been shown to positively impact relationships, as the increased accessibility means an increase in connection, especially when couples are apart. What happens, then, when a couple are face-to-face and using technology separately? Hertlein and Blumer (2013) noted that it is difficult for researchers to access a current and coherent view of the research literature on couple relationships and technology use, though the limited research in

this area has brought light to this current study. The purpose of this study, therefore, is to explore the impact of technology use on couple relationships and, in so doing, to investigate how technology may impact on an individual's sense of attachment and control within the relationship. Links between couple satisfaction and current technology use are explored specifically.

The study investigated three hypotheses. First, it is hypothesized that using technology in the presence of a partner without engagement/interaction will negatively impact on relationship satisfaction. Second, it is further hypothesized that if a couple uses technology together while interacting with each other, this will have a positive impact on relationship satisfaction. Finally, it is hypothesized that the mobile phone may be the mode of technology that has the greatest impact on relationship satisfaction compared to other modes.

Method

A questionnaire was designed to obtain information about couple satisfaction and current technology use. The questionnaire was administered via online and social media where volunteers were invited to participate in the study. Data were collated and t-tests were performed. No significant differences were found between the variables, therefore bivariate correlations were used to explore any existing relationships between couples and technology use.

Participants

Fifty-nine individuals volunteered to participate and completed the 10- to 15-minute questionnaire. Of these 59 volunteers only 42 participants (21 couples) were included in the analysis. The remaining participants were excluded because they did not provide a matching code name, or because their partners did not complete the questionnaire. Participants were approached online via social and professional media— Facebook and email, as well as by word of mouth through acquaintances. Of the 42 participants, there were 21 males and 21 females in heterosexual relationships with ages ranging from 21 to 46 years (M = 30.81, SD = 4.78).

Procedure

The survey questions were devised and powered through Qualtrics online survey software. The first section of the questionnaire contained questions relating to individual demographics such as year of birth, gender, work status, and relationship status. The second section included questions regarding "agreement" within the relationship on a 7-point Likert-type scale, for example, "Thinking about your relationship with your partner, how often do you agree or disagree on the amount of time spent together?" The following questions about the nature of the relationship, feelings about the relationship, and relationship satisfaction were on a 5-point Likert scale. The third section targeted personal technology use as well as perceptions of partner usage, for example, "Which of the following does your partner use?" The final section of the questionnaire included questions relating to technology use while in the presence of one another, such as, "When using technology together such as watching television, how often do you interact and engage with your partner at the same time?"

A Facebook page with the name "Couple Relationships and Technology Use" was created to provide information about the study, where volunteers were invited to complete the survey (see https://www. facebook.com/CoupleRelationshipsAndTechnologyUse). Once they agreed to participate in the study, participants were sent a URL link to their individual email accounts. The URL was linked directly to the questionnaire, which consisted of 36 items (not including subsections). Individuals completed the questionnaire via two separate links to ensure that both partners participated. The survey was completed online in the participants' own time. Respondents were de-identified by entering a code name that replicated their partner's code name, being any number from 1 to 99 followed by any letter in the alphabet. To avoid double-ups in code names, two other questions were asked in order to link the couples. These questions were, "What is the date that you celebrate or acknowledge as your anniversary?" and "How long have you been with your partner?"

After completion of the questionnaire, participants were sent a debriefing sheet containing a note of thanks, information about the study, and a list of support services.

Design

Bivariate correlations were used in the data analysis to report the relationship between technology use and couple relationships. The fourteen dependent measures were Relationship Agreement, Relationship Perception, Engage/Interact while using technology (Engage/Interact TV, MOB, COMP, LAP), using technology separately while being physically together with partner (UseTogSep TV, MOB, COMP, LAP), and Feeling Close with partner while using technology (Feel Close TV, MOB, COMP, LAP).

Results

Frequencies

Length of relationship. Couples reported being in their relationship for a number of years ranging from 1 to 11 years (M = 6.29, SD = 3.03). A majority of participants (23%) had been in their relationship for 2 to 3 years at the time of completing the questionnaire, and a minimum of participants (2%) had been in a relationship for 4 to 5 years.



Figure 1. Frequency of technology use, comparing individuals' frequency of use of television (TV), mobile (MOB), computer (COMP) and laptop (LAPTOP) and perceptions of their partner's use. (See Frequency Table, Appendix C, for validated percentage data.)

Technology use. Figure 1 compares individuals' frequency of technology use and their perception of their partner's use of technology. As the figure shows, the participants' reports of individual TV usage coincided closely with how their partner perceived their TV usage. On the other hand, individual computer use and their partner's perception of their use of computers differed considerably; the differences for mobile phones and laptops between individual use and perceptions of use were not as great. Participants reported mobile phones as their main modality of technology compared to TV, computer, or laptop usage.

Correlational Analysis

Correlational analysis was used in this study. Prior to conducting the correlations, the

data were screened for outliers and normality by visually inspecting z-scores and conducting a Shipiro–Wilk Test of normality. The normality assumption was met (see Appendix C).

Descriptive. Data revealed that 72 individuals began the questionnaire and 59 completed all the questions. If an individual completed the questionnaire but their partner did not, their data were excluded due to the need for a complete data set from both partners in this study. In the end, a sample of 42 participants (N = 42) was retained for analysis. Table 1 depicts the means and standard deviations for the variables used in the study.

Relationship	n	Mean	S.D.	Skewness	Kurtosis
Partner agreement	42	5.95	.533	49	.64
Relationship Perception	42	4.17	.35	31	66
Engage/Interact TV	41	3.68	.72	27	.08
Engage/Interact MOB	41	3.12	.87	01	.00
Engage/Interact COMP	40	2.98	1.09	19	32
Engage/Interact LAP	40	3.03	.95	24	.31
UseSepTog TV	41	2.34	.94	.39	.28
UseSepTog MOB	42	2.71	.74	60	.46
UseSepTog COMP	41	1.95	.95	.66	51
UseSepTog LAP	41	2.24	.86	.24	49
Feel close TV	41	3.98	.69	45	.68
Feel close MOB	41	2.76	.99	.68	.12
Feel close COMP	39	2.56	1.07	.43	22
Feel close LAP	39	2.82	1.05	.52	43

Table 1

Descriptive	Table for	Variables:	Means	and Standard	Deviations
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S.D. = Standard Deviation

Reliability analysis. A reliability analysis was conducted to determine whether items fit together (capturing the essence of measured construct) within each variable. Table 2 illustrates the reliability values.

Subscale	n	Cronbach's Alpha	
Jubsedie		Coefficient	
Relationship Agreement	42	.813	
Relationship Satisfaction	42	.715	
Relationship Feelings	42	.777	
Relationship Perception	42	.781	

Reliability	, Values	(Cronhach's Alpha))
менионну	vulues	Стопоисно лірни)	1

Table 2

For the variable Relationship Agreement, Cronbach's alpha analysis revealed a high reliability score (α = .813). For the Relationship Satisfaction variable, the first item (confide in partner) was removed due to its impact on the alpha score. Removing item one increased the alpha level (α = .715). For the Relationship Feelings variable, reverse scoring was required for one question ("How often do you feel challenged negatively by your partner?"). With nine items, reliability was low (α = .578); however, the alpha level was increased when two questions were removed (financially dependent on partner, and vulnerable with your partner) as outcomes of these items were ambiguous in interpretation. Removing these items increased reliability (α = .777).

The Relationship Perception variable was created when Relationship Feelings and Relationship Satisfaction were merged. Merging these variables yielded high reliability ($\alpha = .781$).

Although Relationship Agreement yielded high reliability, items with Relationship Feelings and Relationship Satisfaction were not combined as the scales differed.

The correlations demonstrated in Table 3 revealed significant correlations between technology use and couple relationships.

	Correlations for Technology Use and Couple Relationships														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	Partner agreement	-													
2.	Relationship Perception	.560**	-												
3.	UseSepTog TV	117	.137	-											
4.	UseSepTog MOB	205	.106	.435**	-										
5.	UseSepTog COMP	021	017	.300	.397*	-									
6.	UseSepTog LAP	137	394*	.429**	.463**	.415**	-								
7.	Engage/Interact TV	.366*	.633**	.245	.143	.075	196	-							
8.	Engage/Interact MOB	.331*	.360*	.038	.020	.014	103	.429**	-						
9.	Engage/Interact COMP	.302	.498**	.187	.022	.263	189	.437**	.536**	-					
10.	Engage/Interact LAP	.342*	.426**	.085	071	057	036	.353*	.828**	.665**	-				
11.	Feel Close TV	.430**	.515**	.237	008	.233	147	.336*	.203	.429**	.193	-			
12.	Feel Close MOB	.289	.357*	205	155	114	242	.088	.583**	.403*	.560**	.420**	-		
13.	Feel Close COMP	.376*	.370*	215	273	.197	265	.066	.250	.536**	.406*	.507**	.727**	-	
14.	Feel Close LAP	.341*	.308	038	311	141	258	.127	.413**	.281	.526**	.464**	.716**	.597**	-

Table 3

** Correlation is significant at the 0.01 level (2 tailed)

* Correlation is significant at the 0.05 level (2 tailed)

UseSepTog variable. A moderate negative relationship between UseSepTog LAP with Relationship Perception was significant, r (41) = -.39, p < .05. This suggests that using the laptop separately while in the presence of a partner is associated with a negative perception of the relationship. Conversely, a moderate positive relationship between Feel Close LAP and Relationship Agreement was significant, r (40) = .34, p = .05. This suggests that couples tend to feel close with their partners during laptop usage when there are also agreements within the relationship.

Engage/Interact variable. There were several positive correlations between technology use while engaging and interacting between couples and perception of their relationship. A moderate-strong positive relationship between Engage/Interact TV with Relationship Perception was significant, r (41) = .63, p < .01. This suggests that engaging and interacting with a partner while watching TV is positively associated with one's perception of the relationship.

Feel Close variable. Several positive correlations were found between feeling close in the relationship and perception of the relationship. A moderate-strong positive relationship between Feel Close TV and Relationship Perception was significant, r (41) = .52, p < .01. This suggests that couples feel close to their partners while watching TV, which impacts on their positive perception of the relationship.

Discussion

The aim of this study was to examine the impact of technology use on couple relationships. It was hypothesized that using technology without engaging/interacting with a partner negatively impacts relationship satisfaction. Results from this study found that laptop use while in the presence of a partner without engaging/interacting is linked to negative perceptions of the relationship. The negative impact was not demonstrated for computer, TV, or mobile phone use. From a neuropsychological view, individuals experience a decrease in their sense of control when their partner uses a laptop in their presence without interaction. The decrease in the sense of control up-regulates the limbic system (emotional area of the brain) which detects potential compromise or violation of the individual's safety and need for attachment and control. The up-regulation of the limbic system leads to activation of the hypothalamus-pituitary-adrenal system (HPA), which facilitates the production and release of the stress hormone cortisol (Rossouw, 2012b). Cortisol triggers a feedback loop to the hypothalamus, which

then down-regulates the stress response. However, continual cortisol release leads to hypercortisolemia, a process involving the destruction of glia and neurons (Rossouw, 2012b). Damage to neural areas can lead to a variety of chronic conditions such as depression and anxiety, which in turn could lead to conflict within relationships triggered by technology use. If one partner in a relationship disengages from a faceto-face interaction while engaging in technology (i.e., the laptop), the other partner may experience a sense of threat to their need to feel attached and in control in that relationship. Therefore couple satisfaction and positive perceptions about the relationship may be compromised, leading to uncontrollable incongruence. Although it was postulated that a decrease in one's sense of control would be apparent in mobile phone use, this phenomenon was found in laptops rather than mobile phones. Possible explanations for the difference of impact between laptop use and mobile phone use is yet to be explored.

Research has suggested that problematic phone use leads to blurred boundaries within relationships. However, the results from this study do not provide support for a negative impact of mobile phone use on couple relationships. Contrary to this result, Kross et al. (2013) found that mobile phone use, particularly for accessing Facebook social media, leads to a decline in life satisfaction. Further research to explore these alternative findings in the area of mobile phone and laptop use and couple satisfaction could be conducted in the future by using a larger sample size than was used in this study. It may be that a mobile phone is quickly accessible and therefore is used frequently but in shorter time periods, whereas a laptop may be used for individual purposes infrequently but in longer time periods. The computer or TV are also larger devices that tend to involve and fill a shared space (i.e., lounge room). Therefore the likelihood of couples engaging/interacting with each other while using these modalities is greater than while using a laptop or mobile phone.

It was also hypothesized that if a couple uses technology together while interacting with each other, there will be a positive impact on relationship satisfaction. The current study found that using all forms of technology while engaging and interacting with one another is related to positive perceptions of the relationship. This was found most particularly for TV. Watching TV together with a partner while engaging and interacting was linked to positive perceptions of the relationship. However, watching TV separately from a partner was not linked to either positive or negative perceptions of the relationship. Lang and Jarvenpaa (2005) indicated that individuals develop their own coping strategies to manage conflict situations caused by technology. Thus, individuals are constantly altering, accommodating, and adjusting social relations in response to the increasing use of technology. This finding coincides with the neuropsychological view of controllable versus uncontrollable incongruence. If couples are managing technology use together, they are enhancing a sense of control within their relationship leading to controllable incongruence. If a sense of control is not achieved (i.e., partners are not managing or agreeing on the type or frequency of technology use) we may see conflict within a relationship, which results from uncontrollable incongruence. It seems that TV is the main mode of technology shared between couples. Even though couples use this form of technology apart from each other as well as together, this does not seem to impact on the relationship. This study found that engaging/ interacting while watching TV enhances a sense of safety in couples. From a neuropsychological perspective, an individual's attachment need is being met when couples engage with one another while watching TV. In this case, the limbic areas in the brain are not activated, hence not producing the stress hormone cortisol, leading to a sense of safety, well-being, and effective neural sprouting (Rossouw, 2012b). This leads to the development of positive neural pathways that enhance approach patterns related to well-being. The results from this study have demonstrated that couples are more likely to develop helpful neuronal patterns while watching TV together and interacting than when using laptops together and not interacting. Moreover, watching TV together while interacting is more likely to lead to approach patterns rather than avoid patterns in brain development. It appears that TV is the mode of technology that supports controllable incongruence between couples, whereas laptop use seems to be associated with creating distance between couples, leading to uncontrollable incongruence.

Finally, it was hypothesized that mobile phone usage may be the mode of technology that has the most impact on relationship satisfaction compared to other modes of technology. Unlike computers or laptops, the mobile phone is rarely separated from its owner (Lang & Jarvenpaa, 2005). One study from Finland, carried out in 2001, found that mobile phone use was extensive in a sample of 3,485 adolescents, aged 14 to 16 years (Leena, Tomi, & Arja, 2004). The researchers found that 89% of respondents used mobile phones with 13% using them for at least one hour daily. They compared mobile phone use with health/lifestyle variables, such as smoking and alcohol use, to explore the association between mobile phone use and well-being, and found that the intensity of mobile phone use was positively associated with health-compromising behaviors. In contrast to this finding by Leena et al., while the participants in this current study reported that mobile phone use was their main modality of technology use (71%), this study did not find a negative connection between mobile phone use and relationship perception. In fact, when a mobile phone was used while engaging and interacting with a partner, there was a positive link with relationship perception. Therefore, if a couple has a positive perception of their relationship, they are also likely to engage/ interact positively with their partner while using mobile phones. Previously, Hertlein (2012) indicated that technology introduces a process of separation and distraction. Although the findings from this study do not support this view, Hertlein and Blumer (2013) explained that couples are not always aware of the subtle changes in their relationship due to technology use. Future studies might aim to use a larger sample size to examine this phenomenon and measure participants in a longitudinal study in order to explore changes within the relationship in the context of mobile phone use.

Couples' reports of personal TV use matched closely to their partner's perception of their TV use. On the other hand, their reports of computer use did not match closely to their partner's perception of their computer use. It may be that computer use has declined with the increasing accessibility of laptops or mobile phones leading to individuals not being aware of the actual frequency of use. Other possibilities for differences in reporting may be that couples do not tend to use computers together as often as TV. The gap between personal and partner computer use may suggest that computers create a divide between couples compared to other forms of technology. If laptops were not available, we could see an increase in reports regarding computer use in the home environment, possibly leading to a more accurate measure of personal use and perception of partner computer use. On the other hand, the similarity of couples' reports of individual and partner TV use suggests that couples are more aware of each other's use. Based on these findings, TV is the mode of technology that specifically seems to enhance couple connection rather than create a divide.

Verbal feedback from participants was voluntarily provided after the completion of the questionnaires. Various participants reported that they acknowledged the intensity of technology use in their external environment, especially in their relationships. One participant disclosed that the questionnaire generated thought and discussion between her and her partner regarding the quality of their relationship. Another participant explained that she and her partner have rules surrounding technology use, such as a "technology-free" bedroom space. Interestingly, another participant acknowledged that she only realized after completing the questionnaire that there had been an issue regarding mobile phone use in the relationship. As a result, she did not relay this in her responses in the questionnaire. This feedback suggests there is acknowledgment of technology having the potential to create separation and disconnection between couples. It also indicates that couples are finding ways to manage the increasing use of technology in their lives. From a neuropsychological point of view, couples working together to manage their technology use enhances a sense of safety, attachment, and controllable incongruence in their relationship. Technology use within a relationship without engaging or connecting, on the other hand, particularly with laptop use, may create uncontrollable incongruence, where a sense of control over the external environment is compromised. In order to enhance a sense of control leading to controllable incongruence, couples find ways together to manage their use of technology, such as watching programs separately on TV in their own times, or creating technology-free zones within their physical space.

Relevance of the study

The increasing accessibility and use of technology implies greater choice and control over social connections than previously (Spears & Lea, 1994). However, the sense of safety and control can be compromised if the use of technology is not successfully managed within couple relationships. Couples faced with conflict due to the use of technology could benefit from support and intervention that encourages controllable incongruence. The brain is a dynamic and plastic entity that continues to grow, develop, and change in response to the external environment. Therefore, the development of avoid patterns can be altered, re-directed, and changed towards approach patterns in the brain. Conflict within relationships due to compromises in safety, attachment, and control can be altered by couples reflecting on the use of technology and its impact on their relationships. If couples are aware of their current technology use and the impact it has on their relationship, then they can consciously make changes, and manage and monitor their use to enhance the sense of controllable incongruence.

Couples can also participate in modes of technolo-

gy that enhance connections between partners-using technology together rather than apart, for example and using forms of technology that provide entertainment or interaction, such as TV or interactive virtual games. Technology may be used to enhance the quality of life for couples, as it can provide closer connection while couples are apart and also provide a means to organizing and managing daily life (Campbell & Ling, 2009). Future studies relating to technology use and couple relationships could encourage self-reflection in relationships in order to establish change if necessary. Hertlein (2012) indicated that the subtle influences of technology use could go undetected by couples. Therefore, intervention involving psychoeducation and programs assisting individuals to monitor and reflect on their technology use could provide a sense of safety, control, and attachment within their relationships.

Limitations of the study and future recommendations

Future research could benefit from exploring how couples manage technology use within their relationship and provide further insight into how individuals can enhance control and attain controllable incongruence. Longitudinal studies using large sample sizes could assist researchers to explore subtle changes in relationships due to technology use. This current study only provided data for heterosexual relationships and did not focus on factors relating to culture, gender, or socioeconomic status. Future studies could aim to explore cultural differences, gender differences, and same-sex relationships in the general population. Questions remain as to how separate laptop use is connected with negative perceptions of the relationship whereas TV, computer, and mobile phone use shows differing results. Contrary to some researcher suggestions, mobile phone use was not linked to negative or positive perceptions of a relationship when used in the presence of a partner without engagement. It is possible that the sample size used within this study did not allow for adequate exploration of mobile phone use and couple relationships in the general population. The variables used in this study (relationship agreement and relationship perception) could not be combined due to differing scale sizes: one variable being on a 7-point Likert-type scale and the other on a 5-point Likert scale. Using the same scales across variables may provide a more robust measure of couple satisfaction and hence decrease the chance of biased/leading questioning within surveys. Future research could also explore the specific characteristics of different forms of technology (i.e., TV, mobile,

computer and laptop) and how they fit into the external environment in ways that enhance or hinder couple relationships. Future research might also include neurobiological markers as a variable using saliva to measure cortisol levels. This could provide neurobiological information on the impact of technology use on stress levels within couple relationships.

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Appendix A Questionnaire

WELCOME TO THE COUPLE RELATIONSHIPS AND TECHNOLOGY QUESTIONNAIRE

Both you **AND** your partner will need to participate in this questionnaire in order for data to be collated.

You can complete the questionnaire at a different time or day to your partner. Simply click on the link when either one of you is ready to begin the questionnaire.

The questionnaire will take approximately 10-15 mins to complete.

Thank you for your participation in this study 'Couple Relationships and Technology Use'

Before Completing this survey, please choose a number between 1 -100 and a single letter of the alphabet (e.g. 26J). This will be your anonymous 'couple code' that both you and your partner will need to specify.

CODE NAME (your code name will be the same as your partners):

What is your Gender?

- O Male (1)
- O Female (2)
- O Inter-sex (3)

What year were you born?

How long have you been with your partner?

- O Click to write Choice 1 (1)
- O Click to write Choice 2 (2)
- O Click to write Choice 3 (3)
- O Click to write Choice 4 (4)
- O Click to write Choice 5 (5)
- O Click to write Choice 6 (6)
- O Click to write Choice 7 (7)
- O Click to write Choice 8 (8)
- O Click to write Choice 9 (9)
- O Click to write Choice 10 (10)

What is your occupation?

Do you work with your partner?

- O Yes (1)
- O No (2)

In terms of your relationship, how often would you agree on:

	Always disagree (1)	Almost always disagree (2)	Frequently disagree (3)	Occasionally disagree (4)	Almost always agree (5)	Always agree (6)
Amount of time spent together (1)						
Matters of						
recreation (2)						
Handling family/						
relationship						
finances (3)						
Aims, goals, and						
things believed to						
be important (4)						
IVIAKING MINOR						
decisions (5)						
IVIAKING MAJOR						
decision (6)						
Household tasks						
interest and						
activities (8)						
Career decisions						
(9)						
Amount of time						
being intimate						
together (10)						

How often do you:

	Never (1)	Rarely (2)	Occasionally	More often	Most of the	All the time
Confido in			(3)	than not (4)	time (5)	(6)
Confide in						
your partner						
Have a						
quarrel with						
your partner						
(2)						
Show						
affection to						
your partner						
(3)						
Compliment						
your partner						
(4)						
Listen to						
your partner						
(5)						
Share ideas						
(6)						
Laugh						
together (7)						
Work on						
a project						
together (8)						
Feel too						
tired for sex						
(9)						

Do you feel:

	Never (1)	Rarely (2)	Occasionally	More often	Most of	All the
			(3)	than not	the time	time (6)
				(4)	(5)	
Respected by your partner						
(1)						
Attractive to your partner (2)						
Attracted to your partner (3)						
Supported by your partner						
(4)						
You are in a 'team' with your						
partner (5)						
Challenged by your partner						
(6)						
Angry or frustrated with your						
partner (7)						
You want your relationship to						
improve (8)						
Satisfied with your sex life (9)						
Satisfied with the amount of						
time spent together (10)						
Satisfied with the						
communication between you						
and your partner (11)						
Your partner attends to you						
when you need (12)						
Your partner focuses on you						
when you are speaking (13)						
Listened and heard by your						
partner (14)						
Relaxed and calm with						
partner (15)						
Vulnerable with your partner						
(16)						
Satisfied with your						
relationship overall (17)						

The next section outlines your use of technology and how you perceive your partner's use of technology

Do you use technology everyday?

- O Yes (1)
- O No (2)

What do you mainly use the Internet for?

Which of the following do YOU use?

	Very Seldom (1)	Rarely (2)	Some times (3)	Often (4)	Very Often (5)
Television (1)					
Smart phone/					
mobile phone					
(2)					
Computer (3)					
Laptop (4)					
Other (Please					
Specify) (5)					

When using your smart phone/mobile phone, on an average day how much time would YOU spend:

	0 - 30 mins (1)	30 mins - 1 hr (2)	1 hr - 2 hrs (3)	2 hrs - 3 hrs (4)	3 hrs - 4 hrs (5)	4 hrs- 5 hrs (6)	5 hrs - and over (7)
Talking (1)							
Tex-ting							
(2)							
Browsing							
the							
Internet							
(3)							
Being on							
face-book							
(4)							
Other							
(please							
specify)							
(5)							

In general, how quickly do you respond to your phone?

- O Immediately (1)
- O As soon as possible (2)
- O At dedicated times (3)
- O Every few days (4)
- O Hardly ever (5)

In general, how quickly do you respond to your emails?

- O Immediately (1)
- O As soon as possible (2)
- O At dedicated times (3)
- O Every few days (4)
- O Hardly ever (5)

Which of the following does YOUR PARTNER use?

	Very Seldom (1)	Rarely (2)	Some times (3)	Often (4)	Very Often (5)
Television (1)					
Smart phone/					
mobile phone					
(2)					
Computer (3)					
Laptop (4)					
Other (Please					
specify) (5)					

When using a smart phone/mobile phone, on an average day how much time do you believe YOUR PARTNER spends:

	0 - 30 mins (1)	30 mins - 1 hr (2)	1 hr - 2 hrs (3)	2 hrs - 3 hrs (4)	3 hrs - 4 hrs (5)	4 hrs- 5 hrs (6)	5 hrs - and over
							(/)
Talking (1)							
Tex-ting							
(2)							
Browsing							
the							
Internet							
(3)							
Being on							
face-book							
(4)							
Other							
(please							
specify)							
(5)							

In general, how quickly do you believe YOUR PARTNER responds to their phone?

- O Immediately (1)
- O As soon as possible (2)
- O At dedicated times (3)
- O Every few days (4)
- O Hardly ever (5)

In general, how quickly do you believe YOUR PARTNER responds to their emails?

- O Immediately (1)
- O As soon as possible (2)
- O At dedicated times (3)
- O Every few days (4)
- O Hardly ever (5)

On an average day, how many hours would you spend using the following FOR WORK purposes?

	0-30 mins (1)	30 mins - 1 hr (2)	1 - 2 hrs (3)	2-3 hrs (4)	3 -4 hrs (5)	5 hrs - and over (6)
Television (1)						
Smart phone/						
mobile phone						
(2)						
Computer (3)						
Laptop (4)						
Other (please						
specify) (5)						

On an average day, how many hours would you spend using the following NOT FOR WORK purposes?

	0 - 30 mins (1)	30 mins - 1 hr (2)	1 - 2 hrs (3)	2 -3 hrs (4)	3 - 4 hrs (5)	5 hrs - and over (6)
Television (1)						
Smart phone/						
mobile phone						
(2)						
Computer (3)						
Laptop (4)						
Other (Please						
specify) (5)						

On an average day, how many hours do you notice YOUR PARTNER using the following FOR WORK purposes?

	0 - 30 mins (1)	30 mins - 1 hr (2)	1 - 2 hrs (3)	2 - 3 hrs (4)	3 - 4 hrs (5)	5 hrs - and over (6)
Television (1)						
Smart phone/						
mobile phone						
(2)						
Computer (3)						
Laptop (4)						
Other (Please						
Specify) (5)						

On an average day, how many hours do you notice YOUR PARTNER using the following NOT FOR WORK purposes?

	0 - 30 mins (1)	30 mins - 1 hr (2)	1 - 2 hrs (3)	2 - 3 hrs (4)	3 -4 hrs (5)	5 hrs - and over (6)
Television (1)						
Smart phone/						
mobile phone						
(2)						
Computer (3)						
Laptop (4)						
Other (Please						
Specify) (5)						

What is it like for you using technology while being in the presence of your partner?

	l tend to be uncomfortable (1)	l am somewhat uncomfortable with it (2)	l am okay with it (3)	l am somewhat comfortable with it (4)	I tend to be comfortable with it (5)
Television (1)					
Smart phone/					
mobile phone					
(2)					
Computer (3)					
Laptop (4)					
Other (Please					
Specify) (5)					

What is it like for you when YOUR PARTNER uses technology while in your presence?

	I tend to be uncomfortable (1)	l am somewhat uncomfortable with it (2)	I am okay with it (3)	l am somewhat comfortable with it (4)	I tend to be comfortable with it (5)
Television (1)					
Smart phone/					
mobile phone					
(2)					
Computer (3)					
Laptop (4)					
Other (Please					
Specify) (5)					

How often do you use technology WITH your partner (e.g. watching television together, reading emails together etc)?

	Never (1)	Not usually (2)	Sometimes (3)	Most of the time (4)	Always (5)
Television (1)					
Smart phone/					
mobile phone					
(2)					
Computer (3)					
Laptop (4)					
Other (Please					
Specify) (5)					

When using technology together such as watching television, do you interact and engage with your partner?

	Never (1)	Not usually (2)	Sometimes (3)	Most of the time (4)	Always (5)
Television (1)					
Smart phone/					
mobile phone					
(2)					
Computer (3)					
Laptop (4)					
Other (Please					
Specify) (5)					

To what extent do you feel close to your partner while engaging in technology (e.g. watching television while holding hands, sitting close, sharing an idea, and/or showing affection)?

	l never feel close (1)	I don't usually feel close (2)	I sometimes feel close (3)	I feel close (4)	l feel very close (5)
Television (1)					
Smart phone/					
mobile phone					
(2)					
Computer (3)					
Laptop (4)					
Other (Please					
Specify) (5)					

How often do you use technology separately from your partner while being physically together with your partner (e.g. reading text messages while eating dinner, watching television while in the middle of a discussion)?

	Never (1)	Not usually (2)	Sometimes (3)	Most of the time (4)	Always (5)
Television (1)					
Smart phone/					
mobile phone					
(2)					
Computer (3)					
Laptop (4)					
Other (Please					
Specify) (5)					

Appendix B

Debrief and Information Sheet



School of Psychology

Thank you for your Participation

Thank you for your participation in this study. Your participation in this study is valuable in exploring the dynamics within current couple relationships. Information from this study can assist with helping individuals to explore and improve on their relationships with their partners. Your input also assists the researcher to further explore how technology use can enhance or hinder the quality of relationships

If you are interested in the final research findings, you can contact the researcher Christina Nguyen at <u>Christina.nguyen@uq.net.au</u>.

Should there be any concerns, discomfort, or questions arising from the completion of this questionnaire, please contact the researcher, or refer to the list of support services. You are encouraged to access any of the services if there is a raised concern that you wish to address.

Relationships Australia: www.relationships.org.au

Headspace: www.headspace.org.au

Lifeline: www.lifeline.org.au 13 11 14

UQ counselling support: <u>ss@uq.edu.au</u> (07) 3365 1702 (Only available if you are a student at UQ) Kids Helpline: <u>www.kidshelp.com.au</u> 1800 55 1800 Parentline: <u>www.parentline.com.au</u> 1300 30 1300

Many thanks for your participation in this study

Christina Nguyen UQ student researcher

Appendix C

SPSS Syntax and Outputs

SYNTAX

* Frequencies for length of relationship and technology use of self and partner.

DATASET ACTIVATE DataSet1.

FREQUENCIES VARIABLES=length_relationship tech_typeU_tv tech_typeU_mob tech_typeU_comp

tech_typeU_lap tech_typeP_tv tech_typeP_mob tech_typeP_comp tech_typeP_lap

/NTILES=4

/STATISTICS=STDDEV VARIANCE RANGE MINIMUM MAXIMUM SEMEAN MEAN MEDIAN MODE SUM SKEWNESS SESKEW

KURTOSIS SEKURT

/ORDER=ANALYSIS.

* Test for Normality

EXAMINE VARIABLES=PartnerAgree RelationPercept Use_interact_tv Use_interact_mob Use_interact_ comp

Use_interact_lap feel_close_tv feel_close_mob feel_close_comp feel_close_lap use_sep_tog_tv

use_sep_tog_mob use_sep_tog_comp use_sep_tog_lap

/PLOT BOXPLOT NPPLOT

/COMPARE GROUPS

/STATISTICS DESCRIPTIVES

/CINTERVAL 95

/MISSING LISTWISE

/NOTOTAL.

*Descriptives/Frequencies for all 14 variables

FREQUENCIES VARIABLES=length_relationship tech_typeU_tv tech_typeU_mob tech_typeU_comp

tech_typeU_lap tech_typeP_tv tech_typeP_mob tech_typeP_comp tech_typeP_lap

/NTILES=4

/STATISTICS=STDDEV VARIANCE RANGE MINIMUM MAXIMUM SEMEAN MEAN MEDIAN MODE SUM SKEWNESS SESKEW

KURTOSIS SEKURT

/ORDER=ANALYSIS.

*Correlations for all 14 variables

CORRELATIONS

/VARIABLES=PartnerAgree RelationPercept Use_interact_tv Use_interact_mob Use_interact_comp

Use_interact_lap feel_close_tv feel_close_mob feel_close_comp feel_close_lap use_sep_tog_tv

use_sep_tog_mob use_sep_tog_comp use_sep_tog_lap

/PRINT=TWOTAIL NOSIG

/STATISTICS DESCRIPTIVES

/MISSING=PAIRWISE.

OUTPUTS

Frequencies

[DataSet1] C:\Users\Stina\Desktop\Psychology\Thesis\Results and Stats\thesis working db v5.sav

				Stat	istics				
	How	Which of the	Which	Which	Which of the	Which of the	Which of the	Which of the	Which of the
	long have	following do	of the	of the	following do	following	following	following	following
	you been	YOU use?-	following	following	YOU use?-	does YOUR	does YOUR	does YOUR	does YOUR
	with your	Television	do YOU	do YOU	Laptop/tablet	PARTNER	PARTNER	PARTNER	PARTNER
	partner?		use?-	use?-		use?-	use?-Smart	use?-	use?-Laptop/
			Smart	Computer		Television	phone/mobile	Computer	tablet
			phone/				phone		
			mobile						
17.1:1	12	42	phone	42	42	42	42	12	12
N Valid	42	42	42	42	42	42	42	42	42
Mean	6.29	3.36	4.69	3.79	3.90	3.14	4.43	3.38	3.69
Std. Error of	460	109	080	202	150	202	122	106	102
Mean	.409	.190	.080	.205	.159	.203	.155	.190	.102
Median	6.00	4.00	5.00	4.00	4.00	3.00	5.00	3.50	4.00
Mode	3	4	5	5	4	4	5	3 ^a	5
Std.	3 0 3 0	1 28/	517	1 3 1 7	1 031	1 3 1 7	859	1 268	1 1 7 9
Deviation	5.057	1.204		1.517	1.051	1.517	.057	1.200	1.177
Variance	9.233	1.650	.268	1.733	1.064	1.735	.739	1.607	1.390
Skewness	.059	573	-1.398	728	-1.202	410	-1.462	473	576
Std. Error of									
c1	.365	.365	.365	.365	.365	.365	.365	.365	.365
Skewness	1.001		1.0-0		1	0.50	1.001	(2)	-10
Kurtosis	-1.201	574	1.078	661	1.507	868	1.391	620	510
Std. Error of Kurtosis	.717	.717	.717	.717	.717	.717	.717	.717	.717
Range	10	4	2	4	4	4	3	4	4
Minimum	1	1	3	1	1	1	2	1	1
Maximum	11	5	5	5	5	5	5	5	5
Sum	264	141	197	159	164	132	186	142	155
25	3.00	3.00	4.00	3.00	3.75	2.00	4.00	3.00	3.00
50	6.00	4.00	5.00	4.00	4.00	3.00	5.00	3.50	4.00
L/3	9.00	4.00	<u> </u>	5.00	5.00	4.00	5.00	4.00	5.00

a. Multiple modes exist. The smallest value is shown

How long have you been with your partner?

	Frequency	Percent	Valid Percent	Cumulative
				Percent
0-1 years 2-3 years 3-4 years 4-5 years 5-6 years 6-7 years 7-8 years 8-9 years 10 years or more Total	2041527562	430549007903 20921146114 16114.0 100.0	888549887987987987987987987987987987987987987	4880-1-54 4880-021-54 2890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1900-021-54 1900-021-54 1900-021-54 1900-021-54 1900-021-54 1900-021-54 1900-021-54 1900-021-54 1900-021-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020

Which of the following do YOU use?-Television

		Frequency	Percent	Valid Percent	Cumulative
					Percent
Valid	Very Seldom Rarely Some times Often Very Often Total	6331 1482 42	14.3 7.1 26:2 33:3 19:0 100:0	14.3 7.2 263.0 19.0 100.0	14.3 21.4 47.6 81.0 100.0

Which of the following do YOU use?-Smart phone/mobile phone

		Frequency	Percent	Valid Percent	Cumulative
					Percent
Valid	Some times Often Very Often Total	1 11 30 42	2.4 26.2 71.4 100.0	2.4 26.2 71.4 100.0	2.4 28.6 100.0

Which of the following do YOU use?-Computer

		Frequency	Percent	Valid Percent	Cumulative
					Percent
Valid	Very Seldom Rarely Some times Often Very Often Total	358888 12 42	7.1 11.9 19.0 42.9 100.0	7.1 11.9 199.0 42.9 100.0	7.1 19.0 38.1 57.1 100.0

Which of the following do YOU use?-Laptop/tablet

		Frequency	Percent	Valid Percent	Cumulative
					Percent
Valid	Very Seldom Rarely Some times Often Very Often Total	2260 200 12 42	4.80 4.03 14.36 47.66 28.60 100.0	4.8 4.83 147.36 28.00 100.0	4.8 2318 100.0

Which of the following does YOUR PARTNER use?-Television

		Frequency	Percent	Valid Percent	Cumulative
					Percent
Valid	Very Seldom Rarely Some times Often Very Often Total	8072090 11002 42	19.0 7.1 28.6 31.0 14.3 100.0	19.0 7.1 28.6 31.0 14.3 100.0	19.0 26.2 54.8 85.7 100.0

Which of the following does YOUR PARTNER use?-Smart phone/mobile phone

		Frequency	Percent	valid Percent	Cumulative
					Percent
Valid	Rarely Some times Often Very Often Total	24 10 26 42	4.8 9.5 23.8 61.9 100.0	4.8 9.5 23.8 61.9 100.0	4.8 14:3 38:1 100:0

Which of the following does YOUR PARTNER use?-Computer

		Frequency	Percent	Valid Percent	Cumulative
					Percent
Valid	Very Seldom Rarely Some times Often Very Often Total	5422092 12092	11.95666 9888 2881.4 100.0	11.05 050004 20004 2001-0 100.0	11.9 21:4 50:00 100:0

Which of the following does YOUR PARTNER use?-Laptop/tablet								
		Frequency	Percent	Valid Percent	Cumulative			
					Percent			
Valid	Very Seldom Rarely Some times Often Very Often Total	250 1023 42	4.8 11.9 23.60 31.0 100.0	4.8 11.99 23.860 281.0 100.0	4.8 16.7 40.5 100.0			

Explore

[DataSet1] C:\Users\Stina\Desktop\Psychology\Thesis\Results and Stats\thesis working db v5.sav

Case Processing Summary							
1	Cases						
1	N va	Percent	N N	Percent	N N	Percent	
Extent of agreement with							
partner (average of 10	35	83.3%	7	16.7%	42	100.0%	
"agreement" questions) Perception of relationship							
(mean of 16 relationship	35	93 30/	7	16 7%	40	100.0%	
feel andrelationship sat	55	00.070	,	10.7 /0	42	100.070	
guestions) When using technology							
together such as watching							
television, how often do you	35	83.3%	7	16.7%	42	100.0%	
interact and engage wit							
Television When using technology							
together such as watching							
television, how often do you	35	83.3%	7	16.7%	42	100.0%	
interact and engage wit							
Smart phone/mobile phone When using technology							
together such as watching							
television, how often do you	35	83.3%	7	16.7%	42	100.0%	
interact and engage wit							
Computer When using technology							
together such as watching							
television, how often do you	35	83.3%	7	16.7%	42	100.0%	
interact and engage wit							
Laptop/tablet To what extent do you feel							
close to your partner while			_	(o = 0)			
engaging in technology (e.g.,	35	83.3%	7	16.7%	42	100.0%	
watching televiTelevision							

To use of output do use food					1	
lo what extent do you reel						
close to your partner while						
engaging in technology (e.g.,	35	83.3%	7	16.7%	42	100.0%
watching televiSmart						
phone/mobile phone To what extent do you feel						
close to your partner while	0.5	00.00/	_	40.70		100.00/
engaging in technology (e.g.,	35	83.3%	(16.7%	42	100.0%
watching televiComputer To what extent do you feel						
close to your partner while						
engaging in technology (e.g.,	35	83.3%	7	16.7%	42	100.0%
watching televiLaptop/						
tablet How often do you use						
technology separately from						
your partner while being	35	83.3%	7	16.7%	42	100.0%
physically together with yo						
Television How often do you use						
technology separately from						
your partner while being	35	83.3%	7	16.7%	42	100.0%
physically together with yo						
Smart phone/mobile phone How often do you use						
technology separately from						
your partner while being	35	83.3%	7	16.7%	42	100.0%
physically together with yo						
Computer How often do you use						
technology separately from						
your partner while being	35	83.3%	7	16.7%	42	100.0%
physically together with yo						
Laptop/tablet						

	Descriptives			
			Statistic	Std. Error
	Mean		5.9000	.09294
	95% Confidence Interval for	Lower Bound	5.7111	
	Mean	Upper Bound	6.0889	
	5% Trimmed Mean		5.9135	
Extent of agreement with	Median		6.0000	
northean (average of 10	Variance		.302	
partner (average of 10	Std. Deviation		.54987	
"agreement" guestions)	Minimum		4.40	
agreement questions)	Maximum		6.90	
	Range		2.50	
	Interguartile Range		.60	
	Skewness		428	. <u>398</u>
	Mean		4 1214	05882
	95% Confidence Interval for	Lower Bound	4.0019	.03002
	Mean	Upper Bound	4.2410	
Perception of relationship	5% Trimmed Mean		4,1260	
	Median		4.1875	
(mean of 16 relationship	Variance		.121	
C	Interguartile Range .60 Interguartile Range .60 Skewness .544 Mean 4.1214 95% Confidence Interval for Lower Bound 4.0019 Mean Upper Bound 4.1260 Median 4.1875 variance .121 Std. Deviation .34797 Minimum 3.50			
teel andrelationship sat		3.50		
questions)	Maximum		4.69	
4	Range		1.19	
	Interguartile Range		.56	
	Skewness		301	. <u>398</u>
	KUROSIS		934	I.//8

	Mean		3.60	.117
	95% Confidence Interval for	Lower Bound	3.36	
When using technology	Mean	Upper Bound	3.84	
	5% Trimmed Mean		3.61	
together such as watching	Median		4.00	
television, how often do you	Std Deviation		.482	
interest and spreas wit	Minimum		.033	
interact and engage wit	Maximum		5	
Television	Range		3	
	Interquartile Range		1	200
	Skewness Kurtosis		380	.398
	Mean		3.09	.144
	95% Confidence interval for	Lower Bound	2.79	
When using technology	Mean	Upper Bound	3.38	
together such as watching	5% Irimmed Mean		3.10	
logether such as watching	Variance		3.00	
television, how often do you	Std Deviation		853	
interact and ongogo wit	Minimum		.000	
interact and engage wit	Maximum		5	
Smart phone/mobile phone	Range		4	
	Interquartile Range		1	200
	Kurtosis		033	. <u>398</u> .778
	Mean 95% Confidence Interval for	Lawar Davind	2.97	.176
	95% Confidence interval for	Lower Bound	2.61	
When using technology	Mean	Upper Bound	3.33	
togothor such as watching	5% Irimmed Mean		2.97	
logether such as watching	Variance		3.00	
television, how often do you	Std Deviation		1.007	
interact and engage wit	Minimum		1	
	Maximum		5	
Computer	Range		4	
	Interquartile Range		2	308
	Kurtosis		088	.778
	Mean 95% Confidence Interval for	Lower Bound	3.09	.155
		Lower Bound	2.11	
When using technology	Mean 5% Trimmed Mean		3.40	
together such as watching	<u>5% minimed Mean</u> Median		3.10	
i i i i i i i i i i i i i i i i i i i	Variance		.845	
television, how often do you	Std. Deviation		.919	
interact and engage wit	Minimum		1	
	Maximum		5	
Laptop/tablet	Range Interquartile Pange		4	
	Skewness		177	.398
	Kurtosis		,509 3 01	.778
	95% Confidence Interval for	Lower Bound	3.67	
	Maan	Upper Bound	4.16	
To what extent do you feel	5% Trimmed Mean		3 94	
	Median		4.00	
close to your partner while	Variance		.492	
engaging in technology (e.g.,	Std. Deviation		.702	
	Minimum		2	
watching televi lelevision	Range		3	
	Interguartile Range		Ŏ	
	Skewness		422	. <u>398</u>
	Mean		2.71	.167
	95% Confidence Interval for	Lower Bound	2.38	
To what extent do you feel	Mean	Upper Bound	3.05	
	5% Trimmed Mean		2.68	
close to your partner while	Median		3.00	
engaging in technology (e.g.	Variance Std. Doviction		.975	
, , , , , , , , , , , , , , , , , , ,			.987	
watching televiSmart	Maximum		5	
phone/mobile phone	Range		4	
ľ	Interquartile Range		1	
	Skewness Kurtosis		.023	.398

	Maan		0.541	100
	95% Confidence Interval for	Lower Bound	2.51	. 100
		Lower Dound	2.10	
	Mean	Opper Bound	2.85	
To what extent do you feel	5% Irimmed Mean		2.48	
close to your partner while	Median		2.00	
blobe to your partitier while	Std Doviation		.903	
engaging in technology (e.g.,	Minimum		.301	
watching tolovi Computer	Maximum		5	
watching televiComputer	Range		4	
	Interguartile Range		1	
	Skewness		.354	. <u>398</u>
	Mean		2.77	.174
	95% Confidence Interval for	Lower Bound	2.42	
To what extent do you feel	Moon	Upper Bound	3.13	
To what extent do you leer	5% Trimmed Mean		2.75	
close to your partner while	Median		3.00	
angening in technology (o.g.	Variance		1.064	
engaging in technology (e.g.,	Std. Deviation		1.031	
watching televiLaptop/	Minimum		1	
	Maximum		5	
tablet	Range		4	
	Skewness		490	398
	Kurtosis		- 484	.778
	95% Confidence Interval for	Lower Bound	2.26	.166
		Lower Dound	1.92	
How often do you use	Mean	оррег воили	2.59	
tochnology sonaratoly from	5% Irimmed Mean		2.20	
technology separately norm	Variance		2.00	
your partner while being	Std Deviation		980	
nhy signally together with ye	Minimum		.500	
physically logether with yo	Maximum		5	
Television	Range		4	
	Interquartile Range		1	
	Skewness Kurtosis		.635	.398
	Mean		2.71	.127
	95% Confidence Interval for	Lower Bound	2.46	
How often do vou use	Mean	Upper Bound	2.97	
	5% Trimmed Mean		2.74	
technology separately from	Median		3.00	
vour partner while being	Variance Std. Doviation		.563	
			.750	
physically together with yo	Maximum		4	
Smart phone/mobile phone	Range		3	
	Interguartile Range		1	
	Skewness		353	. <u>398</u>
	Mean		1.94	.164
	95% Confidence Interval for	Lower Bound	1.61	
How often do you use	Mean	Upper Bound	2.28	
	5% Trimmed Mean		1.88	
technology separately from	Median		2.00	
your partner while being	Variance		.938	
your partner writte being	Std. Deviation		.968	
physically together with yo	Maximum			
Communition of the second s	Naximum Rango		4	
Computer	Interguartile Pange		2	
	Skewness		.738	.398
	Kurtosis		400	.778
	95% Confidence Interval for	Lower Bound	1.90	
		Unner Round	2 50	
How often do you use	Mean 5% Trimmod Moon		2.00	
technology separately from	Median		2.17	
	Variance		753	
your partner while being	Std. Deviation		.868	
nhysically together with yo	Minimum		1	
priysically together with yo	Maximum		4	
Laptop/tablet	Range		3	
	Interquartile Range		1	200
	Kurtosis		-:232	

Tests of Normality						
Extent of agreement with	Statistic	ogorov-Smir df	nov∘ Sig.	Statistic	Snapiro-vviik df	Sig.
partner (average of 10	.101	35	.200*	.975	35	.610
"agreement" guestions)						
Perception of relationship						
(mean of 16 relationship	.109	35	.200*	.949	35	.108
When using technology						
together such as watching						
television, how often do you	.318	35	.000	.817	35	.000
interact and engage wit						
Television When using technology						
together such as watching						
television, how often do you	.231	35	.000	.888	35	.002
interact and engage wit						
Smart phone/mobile phone						
together such as watching						
television, how often do you	.254	35	.000	.897	35	.003
interact and engage wit						
Computer When using technology						
together such as watching						
television, how often do you	.263	35	.000	.886	35	.002
interact and engage wit						
Laptop/tablet To what extent do you feel						
close to your partner while	320	35	000	816	35	000
engaging in technology (e.g.,	.020	00	.000	.010	00	.000
watching televiTelevision To what extent do you feel						
close to your partner while						
engaging in technology (e.g.,	.251	35	.000	.877	35	.001
watching televiSmart						
phone/mobile phone To what extent do you feel						
close to your partner while	214	25	000	002	25	004
engaging in technology (e.g.,	.214	30	.000	.902		.004
watching televiComputer To what extent do you feel						
close to your partner while						
engaging in technology (e.g.,	.258	35	.000	.881	35	.001
watching televiLaptop/						
tablet How often do you use						
technology separately from						
your partner while being	.232	35	.000	.879	35	.001
physically together with yo						
Television						

How often do you use						
technology separately from						
your partner while being	.305	35	.000	.840	35	.000
physically together with yo						
Smart phone/mobile phone						
technology separately from						
technology separately norm						
your partner while being	.235	35	.000	.825	35	.000
physically together with yo						
Computer						
How often do you use						
technology separately from						
your partner while being	.277	35	.000	.860	35	.000
physically together with yo						
Laptop/tablet						
*. This is a lower bound of the	true significa	nce.				

Extent of agreement with partner (average of 10 "agreement" questions)











Extent of agreement with partner (average of 10 "agreement" questions)



Normal Q-Q Plot of Perception of relationship (mean of 16 relationship feel andrelationship sat questions)

Detrended Normal Q-Q Plot of Perception of relationship (mean of 16 relationship feel andrelationship sat questions)





Perception of relationship (mean of 16 relationship feel and relationship sat questions)

When using technology together such as watching television, how often do you interact and engage wit...-Television









When using technology together such as watching television, how often do you interact and engage wit ...-Television

When using technology together such as watching television, how often do you interact and engage wit...-Smart phone/mobile phone



Normal Q-Q Plot of When using technology together such as watching television, how often do you interact and engage wit...-Smart phone/mobile phone

Detrended Normal Q-Q Plot of When using technology together such as watching television, how often do you interact and engage wit...-Smart phone/mobile phone





When using technology together such as watching television, how often do you interact and engage wit...-Computer







When using technology together such as watching television, how often do you interact and engage wit...-Computer

When using technology together such as watching television, how often do you interact and engage wit...-Laptop/tablet





Detrended Normal Q-Q Plot of When using technology together such as watching television, how often do you interact and engage wit...-Laptop/tablet





When using technology together such as watching television, how often do you interact and engage wit...-Laptop/tablet

To what extent do you feel close to your partner while engaging in technology (e.g., watching televi...-Television



Normal Q-Q Plot of To what extent do you feel close to your partner while engaging in technology (e.g., watching televi...-Television



To what extent do you feel close to your partner while engaging in technology (e.g., watching televi...-Television

To what extent do you feel close to your partner while engaging in technology (e.g., watching televi...-Smart phone/mobile phone











To what extent do you feel close to your partner while engaging in technology (e.g., watching televi...-Computer



Normal Q-Q Plot of To what extent do you feel close to your partner while engaging in technology (e.g., watching televi...-Computer





1

To what extent do you feel close to your partner while engaging in technology (e.g., watching televi...-Laptop/tablet











To what extent do you feel close to your partner while engaging in technology (e.g., watching televi...-Laptop/tablet

How often do you use technology separately from your partner while being physically together with yo...-Television



Normal Q-Q Plot of How often do you use technology separately from your partner while being physically together with yo...-Television



How often do you use technology separately from your partner while being physically together with yo ... - Television

Detrended Normal Q-Q Plot of How often do you use technology separately from your partner while being physically together with yo...-Television

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How often do you use technology separately from your partner while being physically together with yo...-Smart phone/mobile phone



Normal Q-Q Plot of How often do you use technology separately from your partner while being physically together with yo...-Smart phone/mobile phone







How often do you use technology separately from your partner while being physically together with yo...-Smart phone/mobile phone

How often do you use technology separately from your partner while being physically together with yo...-Computer



Normal Q-Q Plot of How often do you use technology separately from your partner while being physically together with yo...-Computer





How often do you use technology separately from your partner while being physically together with yo ...- Computer

How often do you use technology separately from your partner while being physically together with yo...-Laptop/tablet



Normal Q-Q Plot of How often do you use technology separately from your partner while being physically together with yo...-Laptop/tablet

Detrended Normal Q-Q Plot of How often do you use technology separately from your partner while being physically together with yo...-Laptop/tablet





How often do you use technology separately from your partner while being physically together with yo ... - Laptop/tablet

Frequencies

[DataSet1] C:\Users\Stina\Desktop\Psychology\Thesis\Results and Stats\thesis working db v5.sav

Statistics										
		How	Which	Which	Which	Which	Which	Which	Which	Which
		long have	of the	of the	of the	of the	of the	of the	of the	of the
		you been	following	following	following	following	following	following	following	following
		with your	do YOŬ	do YOŬ	do YOŬ	do YOŬ	does	does	does	does
		partner?	use?-	use?-	use?-	use?-	YOUR	YOUR	YOUR	YOUR
		I		Smart		Laptop/				
				phone/		tablet				
				mobile		lucit				
				phone						
NT	Valid	42	42	42	42	42	42	42	42	42
IN	Missing	$\overline{0}$	$\overline{0}$	0	$\overline{0}$	$\overline{0}$	$\overline{0}$	$\overline{0}$	0	$\overline{0}$
Mean		6.29	3.36	4.69	3.79	3.90	3.14	4.43	3.38	3.69
Std. Er	ror of	1.00	100			1 - 0		100	100	100
Maan		.469	.198	.080	.203	.159	.203	.133	.196	.182
Modior	n	6.00	4.00	5.00	4.00	4.00	2 00	5.00	2 50	4.00
Mode	1	0.00	4.00	5.00	4.00	4.00	5.00	5.00	3.30	4.00
Std		5	Ŧ	5	5		Ŧ	5	5	
otu.		3.039	1.284	.517	1.317	1.031	1.317	.859	1.268	1,179
Deviati	ion					1.001			1.200	
Varian	се	9.233	1.650	.268	1.733	1.064	1.735	.739	1.607	1.390
Skewne	ess	.059	573	-1.398	728	-1.202	410	-1.462	473	576
Std. Er	ror of	265	265	265	265	265	265	265	265	265
Skown	000	.305	.305	.365	.305	.365	.305	.365	.365	.365
Kurtos	15	-1 201	- 574	1.078	- 661	1 507	- 868	1 391	- 620	- 510
Std. Er	ror of	1.201		1.070	.001	1.507	.000	1.371	.020	
		.717	.717	.717	.717	.717	.717	.717	.717	.717
Kurtos	is			-						
Range		10	4	2	4	4	4	3	4	4
Minim	um		ļ Į	3	<u> </u>	<u> </u>	ļ	2	<u> </u>	<u> </u>
Maxim	num		5	5	5	5	5	5	5	5
Sum	b5	$\frac{264}{200}$	141	19/	159	164	132	186	142	155
	25 50	5.00	3.00	4.00	3.00	- 3.75		4.00	3.00	5.00
	75		4.00	5.00	4.00	4.00		5.00	5.50	4.00
• M14		2.00	<u>- 4.00</u>	11 2.00	·	J.00	4.00	5.00	4.00	5.00

a. Multiple modes exist. The smallest value is shown

How long have you been with your partner?

	Frequency	Percent	Valid Percent	Cumulative
				Percent
0-1 years 2-3 years 3-4 years 4-5 years 5-6 years 6-7 years 7-8 years 8-9 years 10 years or more Total	2041527562	430549007903 20921146114 16114.0 100.0	888549887987987987987987987987987987987987987	4880-1-54 4880-021-54 2890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1890-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1800-021-54 1900-021-54 1900-021-54 1900-021-54 1900-021-54 1900-021-54 1900-021-54 1900-021-54 1900-021-54 1900-021-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020-54 1900-020

Which of the following do YOU use?-Television

		Frequency	Percent	Valid Percent	Cumulative
					Percent
Valid (/ery Seldom Rarely Some times Often /ery Often Iotal	6331 1482 42	14.3 7.1 26:2 33:3 19:0 100:0	14.3 75.2 33.3 19.0 100.0	14.3 21.4 47.6 81.0 100.0

Which of the following do YOU use?-Smart phone/mobile phone

		Frequency	Percent	Valid Percent	Cumulative
					Percent
Valid	Some times Often Very Often Total	1 11 30 42	2.4 26.2 71.4 100.0	2.4 26.2 71.4 100.0	2.4 28.6 100.0

Which of the following do YOU use?-Computer

		Frequency	Percent	Valid Percent	Cumulative
					Percent
Valid	Very Seldom Rarely Some times Often Very Often Total	358888 12 42	7.1 11.9 19.0 42.9 100.0	7.1 11.9 199.0 42.9 100.0	7.1 19.0 38.1 57.1 100.0

Which of the following do YOU use?-Laptop/tablet

		Frequency	Percent	Valid Percent	Cumulative
					Percent
Valid	Very Seldom Rarely Some times Often Very Often Total	2260 202 122 42	4.80 4.80 14:36 47:66 28:60 100:0	4.800 444 147 420 100.0	4.8 231.8 100.0

Which of the following does YOUR PARTNER use?-Television

		Frequency	Percent	Valid Percent	Cumulative
					Percent
Valid	Very Seldom Rarely Some times Often Very Often Total	80000 1100 42	19.0 7.1 28.6 31.0 14.3 100.0	19.0 7.1 28.0 14.3 100.0	19.0 2642 544.7 100.0

Which of the following does YOUR PARTNER use?-Smart phone/mobile phone

		Frequency	Percent	valid Percent	Cumulative
					Percent
Valid	Rarely Some times Often Very Often Total	2 4 10 26 42	4.8 9.5 23.8 61.9 100.0	4.8 9.5 23.8 61.9 100.0	4.8 14:3 38:1 100:0

Which of the following does YOUR PARTNER use?-Computer

		Frequency	Percent	Valid Percent	Cumulative
					Percent
Valid	Very Seldom Rarely Some times Often Very Often Total	5422092 12092	11.95666 2880 200.0 100.0	11.05 050004 20004 2001-0 100.0	11.9 21:4 50:00 100:0

Which of the following does YOUR PARTNER use?-Laptop/tablet

		Frequency	Percent	Valid Percent	Cumulative
					Percent
Valid	Very Seldom Rarely Some times Often Very Often Total	2150 102 102 102 102 102 102 102 102 102 10	4.8 11.9 23.66 31.0 100.0	4.89 11:38 238 30 30 100.0	4.8 16:7 49:5 100:0

Correlations

[DataSet1] C:\Users\Stina\Desktop\Psychology\Thesis\Results and Stats\thesis working db v5.sav

	Mean	Std. Deviation	N
Extent of agreement with partner (average of 10 "agreement" questions)	5.9471	.53391	42
Perception of relationship (mean of 16 relationship feel and relationship sat questions)	4.1667	.34994	42
When using technology together such as watching television, how often do you interact and engage wit Television	3.68	.722	41
When using technology together such as watching television, how often do you interact and engage wit Smart phone/mobile phone	3.12	.872	41
When using technology together such as watching television, how often do you interact and engage wit Computer	2.98	1.097	40
When using technology together such as watching television, how often do you interact and engage wit Laptop/tablet	3.03	.947	40
To what extent do you feel close to your partner while engaging in technology (e.g., watching televiTelevision	3.98	.689	41
To what extent do you feel close to your partner while engaging in technology (e.g., watching televiSmart phone/mobile phone	2.76	.994	41
To what extent do you feel close to your partner while engaging in technology (e.g., watching televiComputer	2.56	1.071	39
To what extent do you feel close to your partner while engaging in technology (e.g., watching televiLaptop/tablet	2.82	1.048	39
How often do you use technology separately from your partner while being physically together with yoTelevision	2.34	.938	41
How often do you use technology separately from your partner while being physically together with yoSmart phone/mobile phone	2.71	.742	42
How often do you use technology separately from your partner while being physically together with yoComputer	1.95	.947	41
How often do you use technology separately from your partner while being physically together with yoLaptop/	2.24	.860	41

Descriptive Statistics

	How often do you use technology feparately from your while being physically together Laptop/ tablet	137	.393	394*	.011	41	147	.364	40	242	.132	40	265	.103	39	258	.107	40	196	.226	40	103	.529	40	189	.255	38
	How often do you use technology feparately from your while being physically together with yo Computer	021	.897 174	017	.917	41	.233	.143	41	114	6/7-	41	.197	.224	40	141	.391	39	.075	.642	41	.014	.933	41	.263	.105	39
	do you use do you use technology from your partner while being physically smart. Smart. phone phone	205	.192	.106	.505	42	008	.958	41	155	.333	41	273	680.	40	311	.051	40	.143	.372	41	.020	006.	41	.022	468.	39
	do you often do you use technology from your partner while being physically together with yo Television	117	.466	.137	.393	41	.237	.135	41	205	198	41	215	.184	40	038	.820	39	.245	.122	41	.038	.814	41	.187	.254	39
	extent do your partner while engaging in technology watching televi Laptop/ tablet	.342*	033	.426**	200.	39	.193	.245	38	.560**	.000	38	.406*	.013	37	.526**	100.	38	·353*	050.	38	.828**	000.	38	.665**	.000	36
	extent do your partner while while engaging in technology (e.g., televi Computer	.302	.062 29	.498**	100.	39	.429**	900.	39	.403*	110.	39	.536**	.000	39	.281	.092	37	.437**	.005	39	.536**	000	39	н		39
	To what Extent do your partner while engaging in technology (e.g., watching televi phone/ mobile	.331 [*]	-034 12	.360*	.021	41	.203	.203	41	.583**	000.	41	.250	.120	40	.413**	600.	39	.429**	500.	41	Ч		41	.536**	.000	39
	To what To what you feel your partner while engaging in technology (e.g.) television Television	.366*	010. 17	.633**	000.	41	.336*	.032	41	.088	.583	41	.066	.685	40	.127	144.	39	1		41	.429**	500.	41	.437 ^{**}	.005	39
ns	technology technology together watching watching how often do you interact and engage wit Laptop/ Lablet	.341*	-031 40	.308	.053	40	.464**	£00 [.]	39	.716**	000.	6E	·597**	000.	38	Ч		40	.127	144.	39	.413**	600.	39	.281	.092	37
orrelatio	technology technology together such as such as such as television, television, television, do you interact and engage wit	.376*	.017 40	.370*	010.	40	.5o7**	.001	40	.727**	.000	40	Ч		40	.597**	000.	38	.066	.685	40	.250	.120	40	.536**	.000	39
S	technology technology together watching watching how often do you interact miteract mobile phone phone	.289	.067	·357*	.022	41	.420**	.006	41	н		41	.727**	.000	40	.716**	000.	39	.088	.583	41	.583**	000.	41	.403*	.011	39
	technology technology together watching watching television, how often do you interact and engage wit Television	.430 ^{**}	.005 41	.515 ^{**}	.001	41	1		41	.420**	.006	41	.507**	.001	40	.464**	£00.	39	.336*	.032	41	.203	.203	41	.429**	.006	39
	Perception of of the of	.560**	.000			42	.5 ^{15**}	.001	41	·357*	.022	41	.370*	010.	40	.308	.053	40	.633**	000.	41	.360*	.021	41	.498**	.001	39
	agreement with partner (average of 10 "agree ment" questions)	1	42	.560**	000	42	.430 ^{**}	.005	41	.289	.067	41	.376*	.017	40	.341 [*]	.031	40	.366*	610.	41	.331*	-034	41	.302	.062	39
		Pearson Correlation	Sig. (2-tailed) N	Pearson Correlation	Sig. (2-tailed)	Z	Pearson Correlation	Sig. (2-tailed)	Z	Pearson Correlation	Sig. (2-tailed)	Z	Pearson Correlation	Sig. (2-tailed)	Z	Pearson Correlation	Sig. (2-tailed)	Z	Pearson Correlation	Sig. (2-tailed)	Z	Pearson Correlation	Sig. (2-tailed)	Z	Pearson Correlation	Sig. (2-tailed)	z
		Extent of agreement with	bartite (average of 10 "agreement" questions)	Perception of relationship (mean of 16 relationship	feel and relationship sat	guestions)	When using technology together such as watching	television, how often do	you interact and engage witTelevision	When using technology together such as watching	television, how often do	you interact and engage witSmart phone/mobile nhone	When using technology together such as watching	television, how often do	you interact and engage witComputer	When using technology together such as watching	television, how often do	you interact and engage witLaptop/tablet	To what extent do you feel close to vour partner while	engaging in technology	(e.g., watching televi Television	To what extent do you feel	engaging in technology	(e.g., watching televi Smart nhone/mobile nhone	To what extent do you feel	engaging in technology	(e.g., watching televi Computer

To what extent do you feel	Pearson	.342*	.426**	.193	.560**	.406*	.526**	.353*	.828**	.665**	Н	.085	1071	057	036
engaging in technology	Sig. (2-tailed)	.033	200.	.245	000.	.013	100.	030	000	000.		.612	699.	.733	.830
(e.g., watching televi Lanton/tablet	z	39	39	38	38	37	38	38	38	36	39	38	39	38	39
How often do you use technology separately from	Pearson Correlation	117	.137	.237	205	215	038	.245	.038	.187	.085	н	.435**	.300	.429**
your partner while being	Sig. (2-tailed)	.466	.393	.135	198.	.184	.820	.122	.814	-254	.612		400.	.056	.006
physically together with voTelevision	Z	41	41	41	41	40	39	41	41	39	38	41	41	41	40
How often do you use technology separately from	Pearson Correlation	205	.106	008	155	273	311	.143	.020	.022	071	.435**	H	.397*	.463**
your partner while being	Sig. (2-tailed)	.192	.505	.958	.333	680.	.051	.372	006.	468.	699.	400.		.010	.002
physically together with yoSmart phone/mobile	Z	42	42	41	41	40	40	41	41	39	39	41	42	41	41
How often do you use technology separately from	Pearson Correlation	021	017	.233	+114	.197	141	.075	.014	.263	057	.300	.397*	н	.415**
vour partner while being	Sig. (2-tailed)	.897	.917	.143	674.	.224	.391	.642	.933	.105	.733	.056	.010		.008
physically together with voComputer	Z	41	41	41	41	40	39	41	41	39	38	41	41	41	40
	Pearson Correlation	137	394*	147	242	265	258	196	103	189	036	.429**	.463**	.415**	Ч
	Sig. (2-tailed)	.393	110.	-364	.132	.103	.107	.226	.529	.255	.830	900.	.002	.008	
How often do you use technology separately from your partner while being physically together with yoLaptop/tablet		41	41	4	0,40	6 6	. 0	64	40	e e e e e e e e e e e e e e e e e e e	6E	40	41	40	41
	פר וווב חיחד ובאבו (ב-ומ	(naii													
*. Correlation is significant at	t the o.o5 level (2-tail	ed).													