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Spousal Connectedness and Personal Information and Communication Technology Use

Chelsea Hutchings

A thesis submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of

Master of Science

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ABSTRACT

Spousal Connectedness and Personal Information and Communication Technology Use

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The primary purpose of this study is to examine the relationship between personal ICT (information and communication technology) device use and couple connectedness. To meet the purpose of the study, three hypotheses were tested: First, it was predicted there was a relationship between spousal connectedness and personal and spousal ICT device usage; second, it was predicted satisfaction with personal or spousal ICT device usage were mediators of the primary relationship between spousal connectedness and ICT device usage; and third, it was expected communication moderated the relationship between spousal connectedness and personal ICT device usage. A representative sample of married adults (n=208) was sampled. Personal and spousal ICT device use, satisfaction with personal and spousal ICT device use, spousal connectedness, and communication were measured and the resulting data analyzed. Regression analyses and path analyses were performed. The first and third hypotheses were found to be significant, but the second was not. The negative relationship between personal ICT device use and spousal connectedness indicates that as ICT device use increases, connectedness decreases. Communication, however, was shown to buffer this relationship. Data indicated that the more a person recalled communicating with their spouse, the less prominent was the relationship between their personal ICT device use and spousal connectedness.

Key Words: connectedness, ICT device, spouse, communication

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Spousal Connectedness and Personal Information and Communication Technology Use

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Abstract

To meet the purpose of the study, three hypotheses were tested: First, it was predicted there was a relationship between spousal connectedness and personal and spousal ICT (information and communication technology) device usage; second, it was predicted satisfaction with personal or spousal ICT device usage were mediators of the primary relationship between spousal connectedness and ICT device usage; and third, it was expected communication moderated the relationship between spousal connectedness and personal ICT device usage. A representative sample of married adults (n=208) were sampled. Personal and spousal ICT device use, satisfaction with personal and spousal ICT device use, spousal connectedness, and communication were measured and the resulting data analyzed. Regression analyses and path analyses were performed to test the hypotheses. The first and third hypotheses were found to be significant, but the second was not. The negative relationship between personal ICT device use and spousal connectedness indicates that as ICT device use increases, connectedness decreases. Communication, however, was shown to buffer this relationship. Data indicated that the more a person recalled communicating with their spouse, the less prominent was the relationship between their personal ICT device use and spousal connectedness.

Key Words: connectedness, ICT device, spouse, communication

Introduction

A growing body of research on marital satisfaction indicates the important role of shared couple-time. Although the causal relationships are not yet clear, there is a well-established correlation between marital satisfaction and the time couples spend together (Reissman, Aron, & Bergen, 1993). Even as the pace of life seems to speed-up, researchers argue that couples increasingly spend more time together in comparison to previous generations (Voorpostel, van der Lippe, & Gershuny, 2009).

Time spent together is one way connectedness is developed (Zabriskie, 2001). When a person does not feel connected to another person, the subsequent feeling and lack of *connectedness* is a reflection of an unhealthy relationship (Lee, Draper, & Lee, 2001). The more time couples spend together, the more likely they are to communicate and subsequently connect with one another (Orthner & Mancini, 1991). As there are many contexts and ways in which couples spend time together, there are likewise many threats or intrusions upon that time. The increasing presence of technology may serve as a facilitator of connectedness (Coyne, Stockdale, Busby, Iverson, & Grant, 2011) but may also be a potential intrusion on couple time (Lanigan, 2009).

Personal information and communication technology (ICT) devices facilitate personal use of technologies for connecting to other people and information. Advancements in technology have increased humans' ability to be connected to endless information and people, any time and anywhere (Lanigan, 2009). The ability of technology to connect people to others in a way enhancing relationships appears to be debatable. On one hand, when technology devices are used to connect people without the means to communicate face-to-face, then the connection can help relationships (Lanigan). On the other hand, when people use technology devices to

connect to other people and information remotely rather than with those they are in face-to-face contact with, the result can be isolation (Watt & White, 1999) and a missed opportunity to build relationships.

Recent research shows couples are using technology more than ever, especially to communicate when they are not together (Coyne et al., 2011). Coyne and her colleagues found that couples using technology to communicate with each other while apart felt closer to each other. Researchers, however, have not yet looked at the influence of spending time with one's spouse while simultaneously using technology to connect with others on the overall connectedness of those couples. The purpose, therefore, of this study was to examine the relationship between personal ICT device use in the context of shared couple time and couple connectedness.

Review of Literature

The Circumplex Model and Connectedness

Family Circumplex Model

The Circumplex Model is built on Family Systems Theory, which defines family members as those who seek to work with other members of their family in order to change social conditions in hopes of achieving specific goals and purposes (Orthner & Mancini, 1991). The two main dimensions of the Circumplex Model are adaptability and cohesion and they are related to family functioning (Green, 1991). The adaptability dimension of a family is measured by the ability of a family system to be able to "change its power structure, role relationships, and relationship rules in response to situational or developmental demands" (Green, p. 56). The cohesion dimension of a family is measured by the ability of a family system to be able to bond or connect with one another (Green).

One of the four levels of cohesion is connectedness and family systems demonstrating connectedness seem to be "the most functional across the life cycle, in part because they balance separateness and togetherness" (Olson & DeFrain, 1994, p. 74). Balanced families and couples are higher functioning and tend to have more positive communication skills (Olson & DeFrain). It follows then that positive and effective communication may be a facilitator for not only a more balanced and higher functioning couple, but also for a more connected couple.

Connectedness

Connectedness is an internal feeling of being able to relate with and feel close to others (Lee et al., 2001). Olson and DeFrain (1994) defined a cohesive family as one with a balanced amount of connectedness. Strong companionate relationships are established upon a sense of connectedness, while those struggling to feel connected may feel distant from other people and even isolated (Lee & Robbins, 1995).

Communication, as the facilitating dimension of the Circumplex Model, is a prerequisite to couples reaching a balanced state of connectedness (Olson & DeFrain, 1994). Without good communication skills to facilitate connectedness, a family can experience extreme levels on the spectrum of cohesion, which are generally seen as problematic for relationships over the long term (Olson, 2000). Interferences with communication are likely and may constrain the ability of the family unit to feel connected. Technology is one such likely intrusion on couple and family time, and their communication.

Technological Influence on the Family System

Although many family theories and models are useful in describing the processes used to explain the way families' function and develop, they fail to include the influence of and interaction with technology on the family system. Lanigan (2009) proposed the

sociotechnological framework to describe the interaction between families and technology (Figure 1).

This framework "acknowledges the effect of multifunctional technologies on families, and [acknowledges] the influence of familial, extrafamilial, and individual characteristics on how those technologies are assimilated within the family context" (Lanigan, 2009, p. 595). This model helps explain a variety of characteristics influencing how individuals and families use technology. It also helps explain why individuals and families with certain characteristics may regulate or integrate technology differently into their lives. The introduction of this framework suggests there is interest in learning more about the influence of technology on family functioning because of technology's perceived pervasiveness on the family system. Specifically, communication was not mentioned as a buffer of any sort, but rather influenced by how the family system integrated technology.

Technology and Family Relationships

In the past few decades, society has experienced tremendous technological advancements. It appears as though these advancements have made technology more user friendly and portable, as well as increasing productivity and allowing for more connectedness in daily life (Lanigan, 2009). Technology is the means by which people perform many of their daily, work, and school tasks as well as keep connected and communicate with other people, while browsing endless amounts of information. Without question, it is likely all facets of a person's life are affected by technology. "There remains little doubt that computer technology will increasingly pervade the lives of individuals, institutions and societies in the future" (Watt & White, 1999, p 1). This includes influence on the family.

Introduction of Technology

As far back as the introduction of the telephone, people were concerned about what new technology would do for or to people's relationships (Hughes & Hans, 2001). In 1926, questions such as "Does the telephone make men more active or lazy," and "Does the telephone break up home life and the old practice of visiting with friends," crossed people's minds (Hughes & Hans, p. 777). The concern over the positive and negative effects of technology on social life is not new. According to Hughes and Hans, technology is a positive force and aid to education, global understanding, communication, and helps make the world a better place. In contrast, technology is also causing harm to relationships and causing people to isolate themselves within families (Hughes & Hans). For example, the introduction of a technology allowing a family member to interact frequently with others outside of the family may jeopardize his or her full attention to interacting with family members.

ICT Devices

With the evolution of personal ICT devices and their increased use, there is reason to consider their influence on quality family time (Lanigan, 2009). Devices such as personal laptops, cell phones, smart phones, and other devices allowing people to have constant access to communication with others, and information from the Internet, fall under this category. They are becoming inseparable from our lives. Text messaging allows for perpetual contact with others (Pettigrew, 2009). Using cell phones allows people to make calls to others at any time of the day and from just about anywhere (Wajcman, Bittman, & Brown, 2008). Likewise, computers allow for emails to be sent in order to increase contact with other people (Lanigan). ICT devices seem to have become an easy (Coyne et al., 2011) and popular way to socialize and connect with each other; however, they can also serve as a distraction to our present responsibilities or

engagements. Technology devices surely "have become part of the landscape of family life" (Hughes & Hans, 2001, p. 777).

Family and Couple Technology Usage

Hughes and Hans (2001), referring to technological developments stated, "the American family during the past 25 years has entered a new world of rapid change" (p. 776). Every day, people are exposed to so much in the world of technology it has become a new norm. Technological upgrades and innovations are the new standard. As a result, "the consumption of new information and communication technologies in the household has become a matter of increasing concern for academic research" (Hynes 2005, p. 3).

Digital Communication

In a recent study on technology use in the family context, Lanigan (2009) reported, (a) 61.8% of American households own computers, (b) 87.6% of them have Internet access, (c) as of January 2008, there were 253,353,579 wireless cell phone subscribers, and (d) 90% of people with a cell phone said they always have their phone with them. These numbers are an increase in technology use from merely a decade ago (McGinty, 2001).

With the increasing pervasiveness of technology in family life, it is important to note, "the significance of communication technologies lies in their role in providing links between and within households and between households and the outside world" (Dickinson, Murcott, Eldridge, & Leader, 2001, p. 241). The use of technology to communicate is not simply an alternate means couples utilize to interact with one another; rather they "represent a qualitative change in how family communication is conducted" (Lanigan, 2009, p 589). Being able to communicate electronically with such ease and efficiency has great benefits. For example, to the military family or to the family who has moved across the country, electronic communication

has become rather commonplace (Christensen, 2009). In a recent study, couples demonstrated a high amount of technology use to contact one another when they were apart, and the most common reason was to express affection (Coyne et al., 2011). Use among family members gathered in person, however, may have varying degrees of benefits. Technology is an ever-growing distraction, which can set the stage for an environment that discourages spending quality time together. Communication technology device use, such as cell phones, more than computer use, is linked to increased distress and decreased family satisfaction as well as increased negative work-to-family or family-to-work spillover in individuals (Chesley, 2005). People no longer leave work at the office, nor can they leave home at home with technology creating constant connection to the outside world. Clearly, technology has woven itself through the complexities of people's lives and relationships.

Family and Couple Relationships

Relationships are an aspect of family life that may be positively and negatively affected by the presence of technology in the home. When this tool is used to connect family members in new ways, such as providing the opportunity for grooming calls when one is running errands or between appointments, it can strengthen family bonds (Lanigan, 2009). The positive side of technology within the family and couples has been acknowledged numerous times in the research (Coyne et al., 2011; Hughes & Hans, 2001; Lanigan, 2009). ICT devices can aid in planning, educating, communicating with family members while apart, and gaining a better global understanding (Hughes & Hans). In addition, using ICT devices to synchronize family members' schedules can help increase efficiency and even a sense of family solidarity (Wajcman et al., 2008). It is also possible for technology use to increase connectedness. In fact, Christensen (2009) described technology use in relationships as a "connected presence" (p. 433).

This allows family members to experience closeness when they are not constantly together. In general, the use of these devices increases connectability when couples are away from each other (Coyne et al.).

Increasing technology usage is good when linking family members to each other, but may have a negative effect when it causes isolation (Watt & White, 1999). The permeability of family boundaries have been affected by ICT devices when it comes to work-family spill over, public and private world boundaries being blurred, and the availability of unrestricted access to knowledge through the Internet, which may not be consistent to family values and teachings (Lanigan, 2009). Technology is a tool used to interact with people outside of the immediate family at just about any time or in about any place. Watt and White (1999) found greater frequency of adolescents constantly communicating with others outside of the family was negatively related to the time they spent with their family and perceived family closeness. "Relational bonds are substantially weakened when attractions to other relationships, either family or friends, become stronger than attractions within the family relationship" (Orthner & Mancini, 1991, p. 294). With constant access to and use of technology, individual interests may supersede those of the family. Watt and White found individual time or alone time increased by 23% with the addition of a computer to a family, resulting in less time sleeping and interacting with one's family.

When it comes to relationship quality, face-to-face contact is still a more effective way of communicating and strengthening family relationships than through various forms of technology (Baym, Zhang, Kunkel, Ledbetter, & Lin, 2007). In order to build and maintain healthy relationships, choices determining how one uses one's time must be regulated, and ICT devices can affect the way people choose to use their time (Wajcman et al., 2008).

Couple Time

As the foundation of strong families, couples' shared free time together was positively related to marital satisfaction (Voorpostel et al., 2009, p.165). Spending time together is an opportunity for couples to interact and communicate and is a characteristic of strong families (Holman & Jacquart, 1988). Therefore, family interaction and communication have been studied in order to preserve such valuable experiences and strengthen couples within families.

Spending Time Together

There are more benefits to couples from spending time together than simply being married to one another (van Klaveren & van den Brink, 2007). Researchers have consistently found that using one's time to interact with other family members yields many positive benefits to the individual and their family (Zabriskie & McCormick, 2003). Glorieux, Minnen, and van Tienoven (2011) reported that time spent together is associated with relationship satisfaction for couples. They specifically noted spousal face-to-face interaction as critical for marital quality. Likewise, Graham (2008) found engaging interactions between couples led to increased satisfaction and feelings of closeness to one another. Alone time, however, has been shown to lead to lower levels of marital satisfaction (Orthner & Mancini, 1991).

Communication

The more time couples spend together, the more opportunity there is for communication. In fact, Orthner and Mancini (1991) found, "the more couples did together, the more likely they were to communicate (p. 291)." Communication is the strongest engaging activity related to feelings of closeness between couples (Graham, 2008). Lee et al. (2001) described connectedness as a positive feeling that helps a person create more satisfying relationships. Although doing things together is correlated with positive feelings of connectedness and marital

satisfaction, communication is even more strongly correlated with positive family and marital outcomes. Doing things together is "more conducive to optimal communication… and leads to increased marital satisfaction" (Johnson, 2006, p. 71). Doing things together without high levels of communication had little to no relationship to marital satisfaction (Holman & Jacquart, 1988). It is important, therefore, couples spend time, quite frequently, communicating (Holman & Jacquart), and interacting with one another (Shaw & Dawson, 2001).

Summary

The family is an essential and even foundational unit to society (DeFrain & Asay, 2007). The strength and solidarity of the couple is foundational to the development of healthy family relationships (Crandell, Crandell, & Vander Zanden, 2009). Couples are able to strengthen their feelings of connectedness to one another, as well as overall marital satisfaction, by spending time together (Crandell et al., 2009). Spending time together is one way in which couples are satisfied, and in a position to communicate (Johnson, 2006), bond, and feel connected (Graham, 2008). Although the spousal relationship is central to the family and the family system relies heavily on the relationship between husband and wife, couples have received much less attention from researchers over the years than research on parents and children.

Technology can enhance or interfere with specific connections between family members, as well as their overall relationship. Some devices can enhance feelings of connectedness between people who are far apart (Coyne et al 2011; Lanigan 2009); the impact, however, of the personal use of technology devices during couple time has not been studied. Therefore, this study examined personal ICT device use and its relationship to spousal connectedness.

To meet the purpose of the study, three hypotheses were tested: First, it was predicted that there was a relationship between spousal connectedness and personal and spousal ICT

device usage; second, it was predicted that satisfaction with personal or spousal ICT device usage were mediators of the primary relationship between spousal connectedness and personal ICT device usage; and third, it was expected that communication moderated the relationship between spousal connectedness and personal ICT device usage.

Methods

Sample

The sample was drawn from a population of married individuals who were living together in the same household with their spouse. A total of 208 individuals participated in the study with 105 (50.48%) males and 103 (49.52%) females. Husbands and wives were not matched for this study. Respondents ranged in age from 20 to 83 (M = 45.5; SD = 16.45) years. Of the participants, 170 (81.73%) had children and the children ranged from less than a year old to 64 years old. The participants had known their spouse an average of 21.06 (SD= 15.01) years, and been married an average of 18.03 (SD = 15.38) years. Most of the participants were Caucasian (84.1%); 6.7% were Hispanic, 5.3% were African American, and the remaining 3.9% were other ethnicities. Over half the sample (57.2 %) had an annual combined household income of $50,000 or higher. Of the participants, 28.4% had earned at least a bachelor's degree, and 26% of their spouses had earned at least a bachelor's degree. All study participants had and used at least one ICT device.

Procedures

The questionnaire was designed using Qualtrics software, and Survey Sampling International (SSI) distributed it in October 2011 to a panel of paid study participants from across the United States. Consent to participate in the study was given when participants accepted the informed consent statement. SSI assured confidentiality and anonymity; no

identifying information was sent to the researcher from SSI. Completed questionnaires were recorded and stored on the secure Qualtrics account of the primary researcher.

Instrumentation

The questionnaire included (a) the Social Connectedness Scale (Lee et al., 2001), (b) a modified Family Communication Scale (Olson, Gorall, & Tiesel, 2004), and (c) interruptive personal and spousal ICT device use portfolio (frequency and duration) and satisfaction with that use. Demographic data were also collected.

The Social Connectedness Scale (Lee et al., 2001) measured feelings of connectedness between spouses. Lee et al. reported strong internal consistency with $\alpha r = .902$. Similarly, the internal consistency for the scale from this data was $\alpha = .929$. The scale consisted of eight items and half were reverse coded. The responses were on a seven-point scale ranging from 1 = "Disagree" to 7 = "Agree." Sample questions include: (a) I feel distant from my spouse, (b) I do not feel like I can relate to my spouse most of the time, and (c) I feel like an outsider with my spouse. Summing the eight item scores created a total connectedness score; a low score represented low connectivity and a high score high connectedness. The scores ranged from 10 to 56 with a mean score of 45.082 (SD = 11.00). The distribution of scores was checked for normalcy and the skewness value was -1.151, an acceptable number indicating it was considered normally distributed.

A modified version of Olson's Family Communication scale (Olson et al., 2004) was used to measure couples' communication. The modification was changing "Family Members" to "I/We" to represent a couple. The scale consisted of 10 items on a five-point response scale. Sample questions include: (a) I am satisfied with how we communicate with each other, (b) We are both very good listeners, and (c) We express affection to each other. Responses ranged from

1 = “Does not describe us at all” to 5 = “Describes us very well.” The scores for each item were summed to create a total communication score. A higher score represented better communication between the couple. The scores ranged from 12 to 50 with a mean score of 38.82 (*SD* = 9.08). The internal consistency of the original scale was α = .88 (Olson et al., 2004), for this study it was α = .948. The skewness score was -.778, indicating it was considered normally distributed.

Interruptive personal and spousal ICT device use was measured by a series of questions created by the researcher in order to collect a general understanding of the participants’ personal ICT device usage, as well as an understanding of their perception of their spouses’ personal ICT device usage. The context of each question was *on a typical day, while I am spending time with my spouse.* An 18-item portfolio of descriptive questions (9 items for personal use and 9 items for spousal use) was used to determine the frequency, and duration of personal and spousal ICT usage. The same statements were used for personal ICT device use and spousal ICT device use, they differed only by beginning with either “I” or “My spouse”. Frequency was measured on a five-point scale from 1 = “Never” to 5 = “More than 15 minutes” and duration was measured on a six-point scale from 1 = “Never” to 6 = “More than 40 minutes.” Examples of the types of questions regarding personal and spousal use included: (a) I initiate use of my personal ICT device while we are in conversation, (b) My spouse initiates use of his/her personal ICT device while we are in conversation, (c) I allow my personal ICT device to interrupt our conversations, and (d) My spouse responds to audible alerts from his/her personal ICT device. Multiplying frequency by duration created a usage index score. A sum of the products for each question became the total usage index score for personal and spousal ICT use. For personal ICT use the index scores ranged from 9 to 130 (*M* = 23.56, *SD* = 18.917), and for spousal use they ranged

from 9 to 209 (*M* = 25.82, *SD* = 25,213). The skewness scores for personal ICT use and spousal ICT use were 2.907 and 3.831, respectively. These values indicated the data were skewed so log transformations on both distributions were conducted and the resulting skewness values were acceptable at .656 and .715 respectively.

Satisfaction with ICT device use was measured for both the participants' personal use and their spouses' use by asking them to rate how "ok" they were with each of the nine personal ICT use items, and the nine spousal ICT use items. Satisfaction was measured on a five-point scale from 1 = "Not at all OK" to 5 = "More than OK." The satisfaction responses were summed for all the personal usage items and they ranged from 9 to 45, with a mean of 29.24 (*SD* = 12.188). Likewise, satisfaction scores for spousal ICT use were summed and ranged from 9 to 45 with a mean of 29.822 (*SD* = 12.159). Skewness values for satisfaction with personal and spousal ICT device were both acceptable (-.199 and -.262, respectively).

Analysis

Once data were collected and checked for errors, SPSS was used for data analysis. To test the main hypothesis for a relationship between ICT use and connectedness, a regression analysis was conducted. To test the second hypothesis to determine if satisfaction with personal and spousal ICT use mediated spousal connectedness, a path analysis was done. To test the final hypothesis examining if communication moderated the relationship between spousal connectedness and personal ICT device use, a regression analysis was completed, followed by the creation of a linear equation to determine if there was an interaction effect.

Limitations

Survey Sampling International (SSI) distributed the questionnaire to a nationally representative random sample. The online version of this questionnaire was presented to a panel

of approximately 2.2 million people who expressed a willingness to participate in online research. Limitations of online data collection are similar to those of self-report data collection (Ward & Buswell, 2009). Qualtrics provided a link to the questionnaire to SSI that was sent out electronically to a random sample of potential participants from their database. This was done to capture a wide range of married people and explore general trends that may exist between spousal connectedness and personal ICT device use.

Results

Descriptive Findings

A number of interesting descriptive findings emerged from the data. Age was negatively correlated with personal and spousal ICT device use indicating younger married people use personal ICT devices more than older married people. The personal ICT device usage portfolio asked about specific types of interruptions taking place during spousal time, and respondents indicated the frequency and duration of those interruptions initiated or allowed by themselves as well as their perception of their spouses' use patterns for each interruption. The types of interruptions with the three highest index scores were similar for both the respondent and their perception of their spouses' use. "Responding to audible alerts" from their personal ICT device, while spending time with their spouse, yielded the highest index score for interruptions for *both* the participants and their spouses. The second highest score for interruption for the participants was by "initiating use while in conversation" with one's spouse. For the participants' perception of spousal use, it was "allowing interruptions while in conversation" with their spouse. The third highest index score of interruption for *both* the participants and their spouses was, "allowing interruptions while engaged in an activity." The lowest type of interruption for *both* the

participants personal use and their perception of their spouses' use was "initiating use during meal time".

Pearson correlations

Pearson correlations were calculated to check for significant relationships among all variables, as well as multicollinearity (see Table 1). Multicollinearity was not found between any of the independent variables to be tested against each other in future regression equations. Most of the variables under examination were found to have significant relationships with the main dependent variable of connectedness. No demographic variables, however, were correlated with connectedness. Subsequently, they were not included in further regression analyses.

Hypothesis Testing

To test the first hypothesis, two Pearson correlations were performed. There was a significant negative relationship between spousal connectedness and personal ICT device use ($r = -.246$, $p < .001$) as well as a significant negative relationship between spousal connectedness and spousal ICT devise use ($r = -.363$, $p < .001$).

The second hypothesis examined if satisfaction with personal or spousal ICT device use were mediators of the relationship between spousal connectedness and personal ICT device use. To determine this, two path analyses were computed. First, according to testing for the first hypothesis, spousal connectedness was related to personal ICT device use. Next, the mediating variables (satisfaction with personal and spousal ICT use) were regressed on spousal connectedness. Both satisfaction with personal ICT use ($\beta = .173$; $p = .012$) and satisfaction with spousal ICT use ($\beta = .221$; $p = .001$) were significantly related to spousal connectedness. The last step of the path analysis was to regress personal ICT use on the mediating variables of satisfaction with personal ($\beta = .000$, $p = .995$) and spousal ($\beta = .005$, $p = .947$) ICT use. Neither

relationship was significant (Figure 2); therefore, satisfaction with personal or spousal ICT device use did not mediate the relationships between spousal connectedness and personal ICT device use.

The third hypothesis tested if communication moderated the relationship between spousal connectedness and personal ICT use. Regression analyses indicated spousal connectedness was significantly related to communication (β= .791; $p < .001$, explaining 62.4% of the variance ($F = 344.945$; $p < .001$) in spousal connectedness. Also, personal ICT device use was negatively related to communication (β= -.142; $p = .04$), and explained 1.6% of the variance ($F = 4.268$; $p = .04$) of personal ICT device use. The process prescribed by Aiken and West (1991) to determine an interaction with a continuous moderating variable was followed. In order to establish moderation, an interaction variable was created by multiplying personal ICT device use and communication. An analysis was then conducted regressing spousal connectedness on personal ICT use, communication, and the interaction of the two. Next, the coefficients from the regression model were used to create a simple slope equation. Three linear equations were created with the lowest, mean, and highest values of communication reported in the data. These were plotted to determine if there was an interaction between communication and the spousal connectedness/personal ICT device use relationship. The slopes of the lines for communication at low, mean, and high levels of communication were not parallel, indicating an interaction (Table 2). Therefore, communication did moderate the relationship between spousal connectedness and personal ICT use.

Discussion

An examination of the current literature suggests this was the first study to focus on how spousal connectedness was influenced by connecting with others (or information) through

personal ICT use during spousal time. The results indicated increased use of ICT devices, both personal and spousal, that were interruptive, correlated with reduced feelings of connectedness with participants' spouses. Research shows that choosing to use one's time to interact with other family members yields many positive benefits to the individual and his or her family (Zabriskie & McCormick, 2003). By extension, choosing to not interact with a spouse while together but instead connecting with others (or information) may undermine the quality of the relationship.

According to Lee and Robins (1995), connectedness is the *foundation* of a strong marriage. The strength and solidarity of the couple is foundational to the development of healthy family relationships (Crandell et al., 2009). Couples are able to strengthen their feelings of connectedness to one another, as well as overall marital satisfaction, by spending time together (Crandell et al.). According to Reissman et al. (1993), spending time together is both a maintenance strategy as well as a mode of therapy; both can result in more satisfying relationships. If technology use replaces spending time with one's spouse, this may cause damage to the relationship. In part, this study measured how much couples allowed their personal ICT devices to interrupt them while spending time with their spouse as well as how much they initiated interrupting that time. These distractions have a significant relationship with the overall feeling of spousal connectedness. Spending time together is beneficial to couples when they are interacting and communicating (Graham, 2008). This study, therefore, indicated that distractions and interruptions may undermine the benefits to spending time with one's spouse.

In order to preserve meaningful interactions during couple time, there is a need for a certain amount of self-regulation. Self-regulation "is defined by processes that enable an individual to guide his or her goal-directed activities over time and across changing

circumstances, including the modulation of thought, affect, and behavior" (Porath & Bateman, 2006). This process is very pertinent to this study. Kopetz, Faber, Fishbach, and Kruglanski (2011) described self-regulation as a choice wherewith a person prioritizes his or her tasks in order to achieve certain goals. While technology devices are so easy to use to communicate with others and retrieve information any time and anywhere (Chesley, 2005; Dickinson, 2001; Wajcman et al., 2008), it is likely couples who regulate this usage while spending time together feel more connected than if there was too much use. Based on the data from this study, it is clear individuals need to regulate their personal ICT device usage so as not to miss out on opportunities to increase feelings of connectedness with their spouse. The interruptive and distractive nature of personal ICT devices must be acknowledged and boundaries set so as to preserve couple face-to-face time and avoid decreased spousal connectedness.

This study also supported the implications made by Lanigan's (2009) sociotechnological model suggesting the family context and the technology use of family members influence one another. It is unclear in this study or in the model whether reduced feelings of spousal connectedness are the result of or the reason for increased personal ICT device use. The importance of this finding is that it supports the sociotechnological model by substantiating the existence of a relationship between family members, couples, and technology use, personal ICT devices. This demonstrates the need for increased awareness of the consequences of this bidirectional relationship on the couple.

The second hypothesis examined mediation of personal or spousal satisfaction on the relationship between personal ICT device use and spousal connectedness. Results showed that the hypothesis was not supported. Neither satisfaction with personal ICT use nor spousal ICT use was significantly related to personal ICT device use. This may be due to the fact that people

are satisfied with their own usage patterns, no matter what they are, and satisfaction with one's spouse's usage does not related to their personal usage. Because of the lack of relationship between satisfaction and personal usage, the complete mediation regression analysis could not be completed. It is worth noting, however, the significant relationship found between satisfaction with personal and spousal ICT use and spousal connectedness. The more "OK" couples were with their personal as well as their spouse's ICT device use, the more connected they felt to one another.

The third hypothesis found that communication buffered the relationship between spousal connectedness and personal ICT device use. Time spent together facilitates the opportunity for communication to take place, and as a result can strengthen spousal bonds (Johnson, 2006). Olson and DeFrain (1994) found that families with better communication skills were more balanced and, therefore, functioned better. The third hypothesis considered how communication moderated the relationship between personal ICT device use and spousal connectedness. This study determined that communication moderated the primary relationship between spousal connectedness and personal ICT device use, meaning communication changed the relationship between personal ICT use and spousal connectedness. The negative relationship became more profound as communication was low (a more steep slope), and it became more positive when communication was high (a less steep slope). Although increased use of personal ICT devices was found to relate to decreased spousal connectedness, communication moderated or changed that relationship. Even though people have more access to many kinds of personal ICT devices (Lanigan 2009), if spouses are intentional about communicating they may offset the impact of ICT device use on spousal connectedness.

Implications

Couples and other family members can benefit from being aware of the negative relationship between personal ICT device use and spousal connectedness. Since use is related to feelings of connectedness, it is important couples practice self regulation of ICT device use in order to receive the benefits of spending time together interacting with one another. By joining communication with self-regulation, couples can more likely avoid decreased connectedness due to high personal ICT device use. By increasing communication, no matter the level of personal ICT device use, feelings of spousal connectedness can remain stronger.

An additional implication from this study is the importance of making sure that when couples are spending time together they are interacting and communicating with one another. Benefits from spousal time come from the interaction and communication that transpires therein (Graham, 2008).

Recommendations

Although this study illuminated one facet of the influence of ICT use on couples' relationships, there are several recommendations for future research. This study looked at a small sample of people who reflected on their technology usage for a moment in time. The long-term affects of allowing personal ICT device use to interrupt and distract from face-to-face interactions with one's spouse are still unknown. It is clear there is a negative relationship at the moment; it would be beneficial to research the long-term impact of technology on spousal connectedness as well as more facets of marital relationships that could be influenced by ICT use.

More research can also be done to validate and further explain the sociotechnological model (Lanigan, 2009). That research could focus on *why* and *how* couples use their technology, and include items clarifying directionality of the relationship.

A greater understanding of the role age plays in the influence of ICT device use on relationship quality would be beneficial to study. Assuring more participants at each end of the age spectrum would be helpful to illuminate similarities and differences across the lifespan.

Further investigation is also needed into the role of technology during spousal and family leisure time to better understand how it can be used as a mechanism of strength and not a source of distraction that may debilitate relationships. Leisure time is one specific example of time wherein families can spend time together interacting. When family members choose to participate in activities with one another, they have the opportunity to communicate and bond (Zabriskie & McCormick, 2003), and likely establish stronger feelings of connectedness.

Perhaps this line of research would benefit from an "in situ" study of ICT use and spousal relationships as they are occurring by studying the experience as it is happening. These methods may provide further insight into technology usage and how it shapes feelings of others while it is happening. Observational research could also be conducted to see how ICT use plays out while couples are spending time together in public places such as dining in a restaurant.

It could be beneficial to analyze the data to see if there is a "threshold" of use and satisfaction with use and how that relates to connectedness and other aspects of marital satisfaction. It would be helpful to determine if there is a point where the use gets too high such that the satisfaction drops and connectedness also changes. Also, another field of research to add to could be the use of matched couples to see if their perceptions are similar and if their perceptions relate to satisfaction with use and its effect upon the relationship.

Finally, although this study collected data from a representative sample of people who use technology, it is still not clear whether these subjects perceived themselves or their spouse as using *too much* technology. Subsequently, the consequences of excessive technology consumption on spousal and family relationships need to be studied.

Conclusion

Previous research has supported the positive, connecting, and even enhancing characteristics of technology use within couple relationships when they are apart (Christensen, 2009; Coyne et al., 2011; Lanigan, 2009). This study, however, sheds light on the role interruptions from personal technology usage play on feelings of connectedness while spending time with one's spouse. The more personal ICT device use during spousal time, the less connected individuals in this study felt to their spouse. Interruptive ICT device use during couple time can be problematic. Fortunately, communication helps moderate the negative relationship found in this study. It is imperative, therefore, for couples to be cognizant of the impact of personal ICT use on the feelings of spousal connectedness and to continue to use sound communication principles to ward off negative influences of technology use.

References

Aiken, L. S., & West, S. G. (1991). *Multiple Regression: Testing & Interpreting Interactions.* Thousand Oaks, CA: Sage Publications, Inc.

Baym, N. K., Zhang, Y. B., Kunkel, A., Ledbetter, A., & Lin, M. (2007). Relational quality and media use in interpersonal relationships. *New Media & Society, 9*(5), 735-752.

Chesley, N. (2005). Blurring boundaries? Linking technology use, spillover, individual distress, and family satisfaction. *Journal of Marriage and Family, 67*, 1237-1248.

Christensen, T. H. (2009). 'Connected presence' in distributed family life. *New Media & Society, 11*(3), 433-451.

Coyne, S. M., Stockdale, L., Busby, D., Iverson, B., & Grant, D. M. (2011). "I Luv U :)": A descriptive study on media use in individuals involved in romantic relationships. *Family Relations, 60,* 150-162.

Crandell, T. L., Crandell, C. H. & Vander Zanden, J. W. (2009). Human Development, Ninth Edition. New York: McGraw Hill.

DeFrain, J., & Asay, S. M. (2007). Strong families around the world: An introduction to the family strengths perspective. *Marriage and Family Review, 41*(1/2), 1-10.

Dickinson, R., Murcott, A., Eldridge J., & Leader, S. (2001). Breakfast, time, and "breakfast time": Television, food, and the household organization of consumption. *Television & New Media, 2*(3), 235-256.

Glorieux, I., Minnen, J., van Tienoven, T. P. (2011). Spouse "together time":Quality time within the household. *Social Indicators Research, 101,* 281-287.

Graham, J. M. (2008). Self-expansion and flow in couples' momentary experiences: An experience sampling study. *Journal of Personality and Social Psychology, 95*(3), 679-694.

Green, G. (1991). Evaluating Faces-III and the Circumplex Model. *Family Process, 30*(1), 55-73.

Holman, T. B., & Jacquart, M. (1988). Leisure-activity patterns and marital satisfaction: A further test. *Journal of Marriage and the Family, 50*(1), 69-77.

Hughes, R., & Hans, J. D. (2001). Computers, the internet, and families - A review of the role new technology plays in family life. *Journal of Family Issues, 22*(6), 776-790.

Hynes, D. (2005). Multimedia consumption & use in the household setting. Unpublished Thesis. Dublin City University, Ireland: School of Communications.

Johnson, H. (2006). The contribution of couple leisure involvement, leisure time, and leisure satisfaction to marital satisfaction. *Marriage & Family Review, 40*(1), 69-91.

Kopetz, C., Faber, T., Fishbach, A., & Kruglanski, A. W. (2011). The multifinality constraints effect: How goal multiplicity narrows the means set to a focal end. *Journal of Personality and Social Psychology, 100*(5), 810-826.

Lanigan, J. D. (2009). A sociotechnological model for family research and intervention: How information and communication technologies affect family life. *Marriage & Family Review, 45*(6-8), 587-609.

Lee, R., Draper, M., & Lee, S. (2001). Social connectedness, dysfunctional interpersonal behaviors, and psychological distress: Testing a mediator model. *Journal of Counseling Psychology, 48*, 310-318.

Lee, R. M., & Robbins, S. B. (1995). Measuring belongingness: The social connectedness and social assurance scales. *Journal of Counseling Psychology, 42*(2), 232-241.

McGinty, M. (2001). Suit yourself. *Communications of the ACM, 44*(9), 21-23.

Olson, D. H. (2000). Circumplex model of marital and family systems. *Journal of Family Therapy, 22,* 144-167.

Olson, D. H., & DeFrain, J. (1994). *Marriage and the family: Diversity and strengths*. Mountainview, CA: Mayfield Publishing Company.

Olson, D. H., Gorall, D. M., & Tiesel, J. W. (2004). *Faces IV Package.* Minneapolis, MN: Life Innovations.

Orthner, D. K., & Mancini, J. A. (1991). Benefits of leisure for family bonding. In B. L. Driver, P. J. Brown, & G. L. Peterson (Eds.), Benefits of leisure. (pp. 289-301). State College, PA: Venture Publishing.

Pettigrew, J. (2009). Text messaging and connectedness within close interpersonal relationships. *Marriage & Family Review, 45,* 697-716.

Porath, C. L., & Bateman, T. S. (2006). Self-Regulation: From Goal Orientation to Job Performance. *Journal of Applied Psychology, 91(*1).

Reissman, C., Aron, A., & Bergen, M. R. (1993) Shared activities and marital satisfaction: Causal direction and self-expression versus boredom. *Journal of Social and Personal Relationships, 10,* 243-254.

Shaw, S.M., & Dawson, D. (2001). Purposive leisure: Examining parental discourses on family activites. *Leisure Sciences, 23*(4), 217-231.

van Klaveren, C., & van den Brink, H. M. (2007). Intra-household work time synchronization: Togetherness or marital benefits? *Social Indicators Research, 84*(1), 39-52.

Voorpostel, M., van der Lippe, T., & Gershuny, J. (2009) Trends in free time with a partner: A transformation of intimacy? *Social Indicators Research, 93*(1), 165-169.

Wajcman, J., Bittman, M., & Brown, J. E. (2008). Families without borders: Mobile phones, connectedness and work-home divisions. *Sociology, 42*(4), 635-652.

Ward, P., & Buswell, L. (2009). Review of online data collection techniques in leisure research. *Abstracts from the 2009 Leisure Research Symposium,* Ashburn, VA. National Recreation and Parks Association.

Watt, D., & White, J. M. (1999). Computers and the family life: A family development perspective. *Journal of Comparative Family Studies, 30*(1), 1-15.

Zabriskie, R.B. (2001). Family recreation: How can we make a difference? *Parks and Recreation, 36*(10), 30-42.

Zabriskie, R. B., & McCormick, B. P. (2003). Parent and child perspectives of family leisure involvement and satisfaction with family life. *Journal of Leisure Research, 35*(2), 163-189.

Table 1

Pearson Correlations Between Study Variables

	Connected Total	ICTuse Personal_ln	ICTuse Spousal_ln	ICTsat Personal	ICTsat Spousal	Communication	Age	Years Married	Number of Children
Connected Total	1	-.246**	-.363**	.173*	.221**	.791**	.094	.025	.027
ICTuse Personal_ln		1	.789**	.000	.005	-.142*	-.413**	-.379**	-.156*
ICTuse Spousal_ln			1	-.029	-.106	-.288**	-.366	-.322**	-.127
ICTsat Personal				1	.901**	.125	.126	.135	-.033
ICTsat Spousal					1	.167*	.154*	.167*	-.001
Communication						1	.077	.047	-.010

*p < .05
**p<.01

Table 2

Predicted Slopes Showing Interaction Based on Communication Level

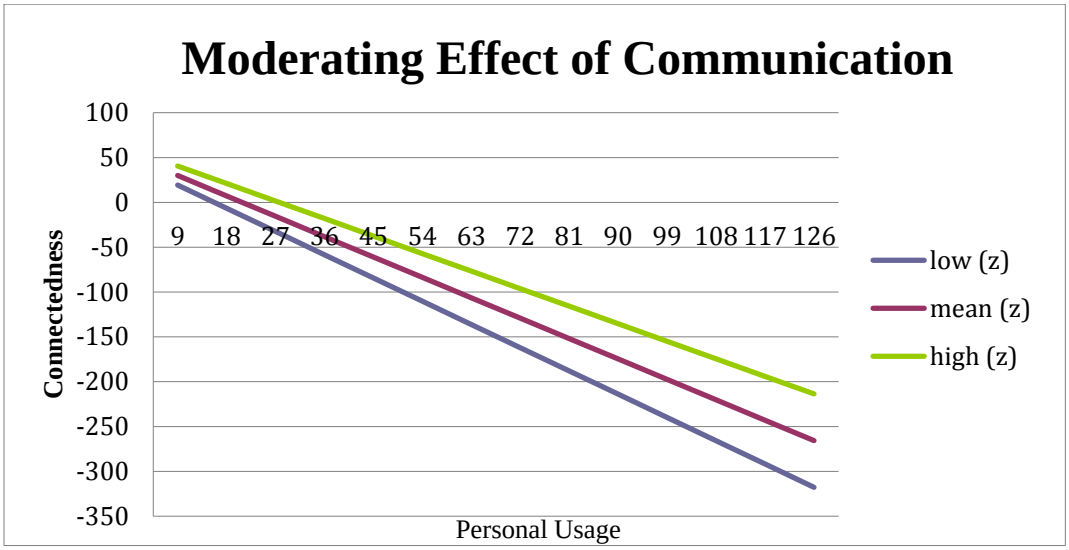

Figure 1. Sociotechnological Model

by 916427733] At: 18:01 19 March 2011

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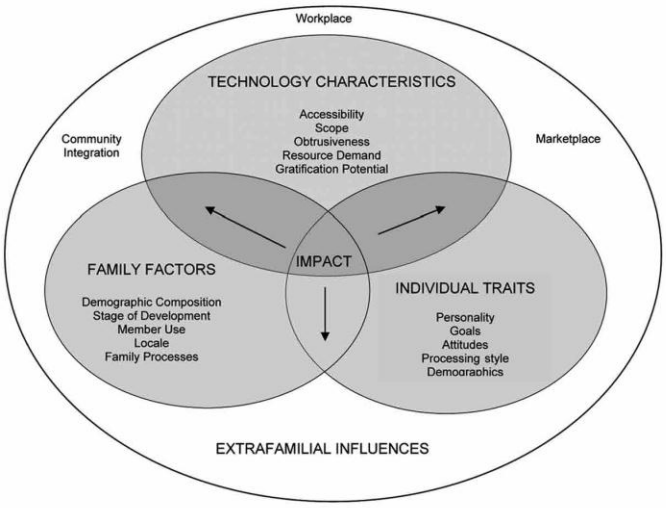
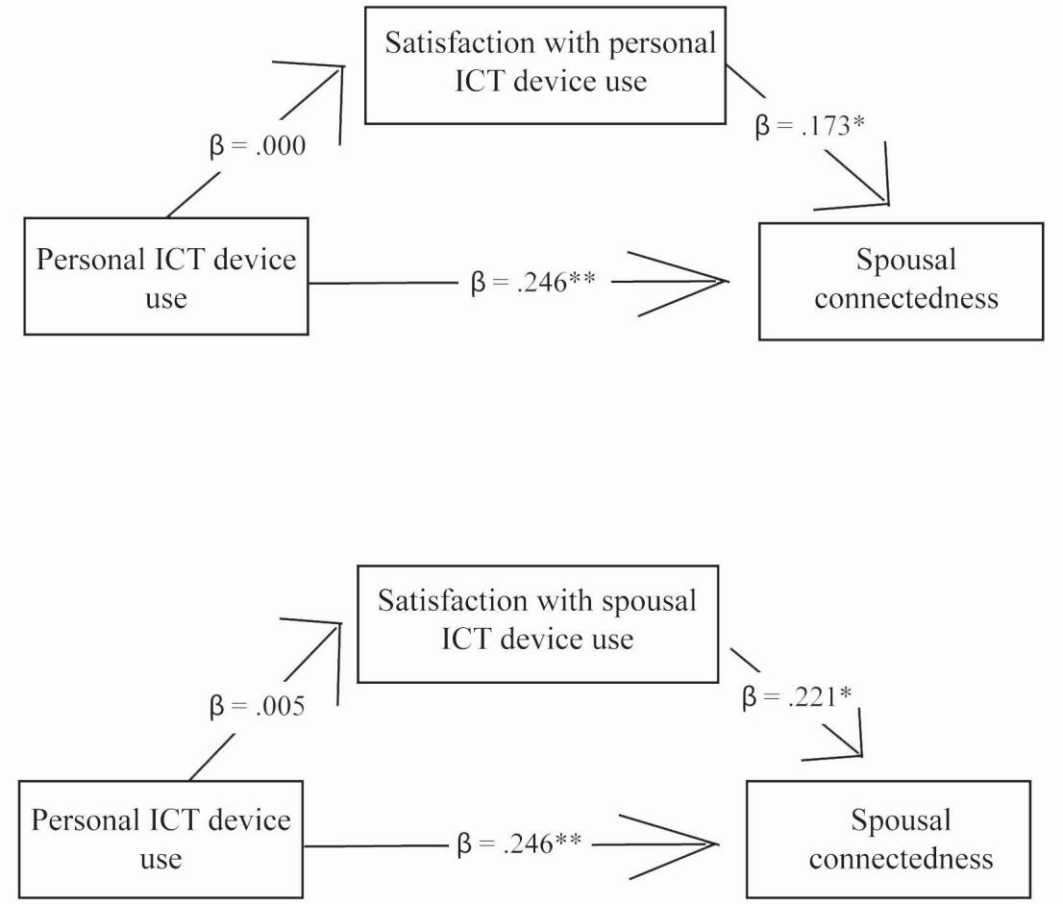


FIGURE 1 Sociotechnological family framework.

Figure 2. Satisfaction, (personal and spousal), as a Mediator of the Relationship Between Personal ICT Device Use and Spousal Connectedness



*p < .05
**p<.001

Appendix A

Prospectus

Chapter 1

Introduction

Home is one place where family members can bond, learn how to problem solve, strengthen relationships, increase communication, and develop life and social skills (Agate, Zabriskie, Agate, & Poff, 2009). "The family is the fundamental unit of society, and is perhaps the 'oldest and most resilient institution' in society" (DeFrain & Asay, 2007, p.2). In order for families to remain a strong and fundamental unit of society, family members must continue to learn, strengthen, and develop. To better understand families, it is helpful to look at them through a systems perspective.

The Family Circumplex Model is founded on a systems perspective of families where all members constitute and work as a system. According to Olson and DeFrain (1994), three key dimensions that measure how well a family functions are: adaptability, cohesion, and communication; with communication serving as the facilitating dimension of the first two. Olson stated that the value and importance in studying these dimensions is their key to understanding marital and family systems (2000). A balance in adaptability and cohesion, with the presence of healthy communication, yield healthier relationships and higher functioning families (Olson & DeFrain).

The relationship between husband and wife is central to the health of the family (Disney & Bateman, 1996). A *relationship* is built and strengthened as two people feel more *related* to one another. How connected couples feel to one another is one indicator or measure of how related they feel (Busby, Holman, & Taniguchi, 2001). When a person does not feel connected to another person, the subsequent feeling of a lack of *connectedness* is a reflection of an unhealthy relationship (Lee, 2001). A critical context, in which people can feel this

connectedness and strengthen it is when they spend time together (Zabriskie, 2001). There are many contexts and ways in which families spend time together. Likewise, there are also many threats or intrusions upon that time. The increasing presence of technology is a potential intrusion on family time and influence on the family system (Lanigan, 2009).

Technology connects people to others via a variety of pathways of communication, as well as to a surplus of information at any time and from any place. The ability of technology to connect people to others in a way that enhances relationships appears to be debatable. On one hand, when technology devices are used to connect people without the means to communicate face-to-face, then the connection can help relationships (Lanigan, 2009). On the other hand, when people use technology devices to connect to people and information remotely when they are in a place that facilitates in-person connectedness, such as when they are with others, the result can be isolation (Watt & White, 1999) and a missed opportunity to build relationships. Devices that facilitate the personal use of technologies for connecting to other people and obtaining information are referred to as personal information and communication technology (ICT) devices.

Advancements in technology have increased humans' ability to be connected to endless information and people, any time and anywhere (Lanigan, 2009). Likewise, recent research shows that couples are using technology more than ever, especially to communicate when they are not together (Coyne et al., In Press). Coyne and her colleagues found that by couples using technology to communicate with each other while they are apart, they felt closer to each other. Researchers, however, have not yet looked at the influence of spending time with one's spouse while simultaneously using technology to connect with others, on the overall connectedness of those couples.

Statement of the Problem

The primary problem of this study is to examine the relationship between personal ICT device use and couple connectedness. Two sub-problems of the study are to determine if satisfaction with personal and spousal ICT device usage mediates the relationship between ICT usage patterns and couple connectedness and to determine if the relationship between ICT device usage patterns and spousal connectedness is moderated by communication.

Purpose of the Study

The primary purpose of this study is to more closely examine the Family Circumplex Model and the role that technology may play in it. The secondary purpose of this study is to provide married couples with information to help improve awareness of potential threats to spousal connectedness.

Hypotheses

A number of null hypotheses will be tested to determine the relationships between the independent and dependent variables, as well as the possible moderating and mediating variables. The primary hypothesis will examine the relationship between spousal connectedness and personal ICT device usage as follows:

- H01: There is no relationship between spousal connectedness and personal ICT device usage.

A second set of hypotheses will examine whether or not satisfaction with personal and spousal ICT device usage is a mediator of the primary relationship being looked at in this study.

- H02: There is no relationship between spousal connectedness and satisfaction with personal ICT device usage.

- H03: There is no relationship between spousal connectedness and satisfaction with spousal ICT device usage.
- H04: There is no relationship between personal ICT device usage and satisfaction with personal ICT device usage.
- H05: There is no relationship between personal ICT device usage and spousal satisfaction with spousal ICT device usage.
- H06: Personal and spousal satisfaction with ICT device usage is not a significant mediator of the relationship between spousal connectedness and person ICT device usage.

A third set of hypotheses will examine whether or not communication moderates the relationship between spousal connectedness and personal ICT device usage.

- H07: There is no relationship between spousal connectedness and communication.
- H08: There is no relationship between personal ICT device usage and communication.
- H09: Communication is not a significant moderator of the relationship between spousal connectedness and personal ICT device usage.

Definition of Terms

The following terms will be defined as follows throughout this paper:

1. Family time- time family members spend time together.
2. Spousal time- time that spouses spend together; this term also exists under the umbrella of *family time.*
3. Cohesion- the balance between too much (enmeshed) and too little closeness (disengaged) (Olson & DeFrain, 1994).

4. Connectedness- an internal feeling of being able to relate with and feel close to others (Lee, Draper, & Lee, 2001).
5. Couple- a married couple; spouse or spousal partnership.
6. ICT device- a rapidly advancing, multifunctional, information, and communication technology, such as cellular devices, personal digital assistants, and computers (Lanigan, 2009).
7. Personal ICT device usage- an indexed score based on the frequency and duration of using an ICT device by oneself to interact with others or information.
8. Spousal ICT device usage- an indexed score based on the frequency and duration of using an ICT device by him/herself to interact with others or information.

Delimitations

This study will be delimitated to the following:

1. This study will be conducted with individuals who are married and living together in the same house (with or without children).
2. Approximately 200-250 questionnaires will be distributed online through a survey sampling company.
3. The questionnaire will include the connectedness scale to measure spousal connectedness (Lee, Draper, & Lee, 2001), a set of questions to evaluate personal and spousal ICT device usage, and a scale to measure communication between spousal partnerships (Olson, Gorall, & Tiesel, 2004). Demographic data will also be collected.
4. Data will be collected from October 2011 until the desired sample size is achieved.

Limitations

This study will be limited to the following:

1. Participants are paid volunteers and may be influenced by financial desires.
2. By using an online survey sampling company, not all people will have the opportunity to participate. The sample is designed to be representative but is not a random sample of all married couples living in America.

Need for the study

Families are an important topic for research because the family is an essential and even foundational unit to society (DeFrain & Asay, 2007). Although the spousal relationship is central to the family and the family system relies heavily on the relationship between husband and wife, couples have received much less attention from researchers over the years than research on parents and children. Boundary formation, development of interest and identity, developing family cohesion, learning how to communicate, and developing adaptability are established within the family system (Orthner & Mancini, 1991). Within this system, the mother and father play a critical role in all these areas of development (Crandell, Crandell, & Vander Zanden, 2009).

The Family Circumplex Model is built upon family systems theory and depicts three aspects of family functioning: cohesion, flexibility, and communication (Olson & DeFrain, 1994). On both the dimensions of cohesion and flexibility, "the goal for couples and families is to balance between the extremes" (Olson &DeFrain, p. 68). Communication is the facilitating dimension of the Circumplex Model (Olson & DeFrain). Olson and DeFrain found that those families who were *balanced* were also those who had better communication skills, and vice versa

(1994). Balanced families, according to the Circumplex Model, also seem to be the most functional across the life cycle (Olson & DeFrain).

According to Olson and DeFrain (1994), connectedness is one measure of balance on the cohesion dimension of family functioning. The strength and solidarity of the couple is foundational to the development of healthy family relationships (Crandell et al., 2009). Couples are able to strengthen their feelings of connectedness to one another, as well as overall marital satisfaction, by spending time together (Crandell et al., 2009). Spending time together is one way in which families are satisfied and in a position to communicate, bond, and feel connected (Agate et al.).

Technology can interfere or enhance specific connections between family members, as well as their overall relationship. Time spent around the computer shared with family members can improve relationships; however, when family members do not share that time on computers with other family members, or when interest levels differ, then computer time is linked to reduced connection and can actually harm relationships (Lanigan, 2009). Technology promotes "greater communication and better access to education… greater global understanding, and makes the world a better place," while also promoting "impoverish[ed] relationships, isolation of people within families, and distancing between families and the outside world" (Hughes & Hans 2001, p. 776-777). Technology, therefore, can be both a positive and negative force.

To better understand the impact of technology on spousal connectedness, Coyne et al. (In Press) examined the use of communication technologies between romantic couples. They discovered using technology devices to keep in contact throughout the day while couples were not able to be together actually enhanced their relationships. Although using personal ICT devices to connect with one another during physical separation has been shown to lead to

enhancing the relationship, it might be quite a different scenario when the couple is together but choosing to spend their time connecting with other people and information instead of one another. In Coyne's research, however, the effect of using such technology devices to communicate, or connect, with others, while spending time with one's spouse was not studied. This study will attempt to clarify these relationships. In addition, given the importance of couples to the family unit, and threats to their time together, it will hopefully depict the importance of the continuous study various factors that may threaten their relationships.

Chapter 2

Review of Literature

This chapter will review all literature pertinent to establishing a foundation upon which the topic of this study is built. The primary problem of this study is to examine the relationship between personal ICT device use and couple connectedness. Two sub-problems of the study are to determine if satisfaction with personal and spousal ICT device usage mediates the relationship between ICT usage patterns and couple connectedness and to determine if the relationship between ICT device usage patterns and spousal connectedness is moderated by communication. The literature will be organized by the following topics: (a) Family Systems Theory, (b) The Family Circumplex Model and Connectedness, (c) Technology, and (d) Family Time.

Family Systems Theory

A systems perspective is often used to study family dynamics and functioning. Family Systems Theory indicates that a family is only as strong as the system in which it exists and a family together is greater than the sum of its parts (Zabriskie & McCormick, 2003). Family members alone are only individuals; together, they are a much more powerful entity, one which can work together for greater goals and purposes.

Family Systems Theory defines family members as those who seek to work with other members of their family in order to change social conditions in hopes of achieving specific goals and purposes (Orthner & Mancini, 1991). Families are not only made up of individuals, but families are also a collective group with joined goals and purposes. "The relations between the family and its environment are composed of transactions that bridge and link the family to external systems while maintaining the boundaries of the family system" (White & Klein, 2008, p. 169).

Family Systems Theory focuses on the importance of communication as a facilitator of cohesion and balance within the family (Orthner & Mancini, 1991). According to Systems theory, it is important for families to communicate well because they need to work together as a system, adjust to changes as a system, and operate in a pattern that is consistent with that family's particular equilibrium (White & Klein, 2008). Several approaches have been used to study and understand the dynamics of family systems. One that has received attention is the Family Circumplex Model.

Family Circumplex Model and Connectedness

Family Circumplex Model

The Circumplex Model is built on Family Systems Theory. There are two main dimensions of family functioning, adaptability and cohesion; both are explained in the Circumplex Model of marital and family systems. Adaptability and cohesion are related to family functioning (Green, 1991). The adaptability dimension of a family is measured by the ability of a family system to be able to "change its power structure, role relationships, and relationship rules in response to situational or developmental demands" (Green, p. 56). The cohesion dimension of a family is measured by the ability of a family system to be able to bond with one another (Green).

One of the four levels of cohesion is connectedness. Family systems that demonstrate connectedness seem to be "the most functional across the life cycle, in part because they balance separateness and togetherness" (Olson & DeFrain, 1991, p. 74). Balanced families are higher functioning and tend to have more positive communication skills (Olson & DeFrain). Positive and effective communication is, therefore, a facilitator for not only a more balanced and higher functioning family or couple, but also for a more connected family or couple.

Connectedness

The Family Circumplex Model (Olson & DeFrain, 1994) helps explain connectedness within the family. Connectedness is an internal feeling of being able to relate with and feel close to others (Lee et al., 2001). It emphasizes the need for families to have a balanced amount of cohesion within their units, and Olson and DeFrain define a cohesive family as one with a balanced amount of connectedness. Strong companionate relationships are established upon a sense of connectedness, while those struggling to feel connected may feel distant from other people and even isolated (Lee & Robbins, 1995).

The facilitating dimension of the Circumplex Model, communication, is a prerequisite to couples reaching this balanced state of connectedness (Olson & DeFrain, 1991). Without good communication skills to facilitate this balanced dimension of cohesion, a family can experience extreme levels of the spectrum, which are generally seen as problematic for relationships over the long term (Olson, 2000). Interferences with communication are likely and may constrain the ability of the family unit to have balanced family functioning. Technology is one such likely intrusion on couple and family time, and their communication.

Technological Influence on the Family System

Although many family theories and models are useful in describing the processes that help explain the way families function and develop, they fail to include the influence of and interaction with technology on the family system.

Lanigan (2009) proposed the sociotechnological framework to describe the interaction between families and technology (Appendix A-1a). This framework "acknowledges the effect of multifunctional technologies on families, and [acknowledges] the influence of familial, extrafamilial, and individual characteristics on how those technologies are assimilated within the

family context" (Lanigan, p. 595). This model helps explain how a variety of characteristics may influence how individuals and families use technology. It also helps explain why individuals and families with certain characteristics may regulate or integrate technology differently into their lives. The introduction of this framework suggests there is interest in learning more about the influence of technology on family functioning because of technology's perceived pervasiveness on the family system.

Technology and the Family

In the past few decades, society has experienced tremendous technological advancements. It appears as though these advancements have made technology more user friendly and portable, as well as providing a more efficient method to productivity and connectedness in daily life (Lanigan, 2009). Technology is the means by which people perform many of their daily, work, and school tasks as well as keep connected and communicate with other people, while browsing endless amounts of information. Without question, it is likely that all facets of a person's life are affected by technology. "There remains little doubt that computer technology will increasingly pervade the lives of individuals, institutions and societies in the future"(Watt & White 1999, p 1). This includes influence on the family.

Introduction of Technology

Even as far back as the introduction of the telephone, people were concerned about what this new technology would do for or to people's relationships (Hughes & Hans, 2001). In 1926, questions such as "Does the telephone make men more active or lazy," and "Does the telephone break up home life and the old practice of visiting with friends," crossed people's minds (Hughes & Hans, p. 777). The concern over the positive and negative effects of technology on social life is not new. Likewise, since technology is advancing and changing more quickly, so are the

concerns. According to Hughes and Hans, technology is a positive force and aid to education, global understanding, communication, and helps make the world a better place. Technology is also causing harm to relationships, and causing people to isolate themselves within families (Hughes & Hans). For example, the introduction of a technology that allows a family member to interact with others outside of the family may jeopardize his/her full attention to interacting with family members.

ICT Devices

With the evolution of information and communication technology (ICT) devices and their increased use, there is reason to consider their influence on quality family time (Lanigan, 2009). Devices such as personal laptops, cell phones, smart phones, and other devices that allow people to have constant access to communication with others and information from the Internet fall under this category. They are becoming inseparable from our lives. Text messaging allows for perpetual contact with others (Pettigrew, 2009). Using cell phones allows people to make calls to others at any time of the day and from just about anywhere (Wajcman, Bittman, & Brown, 2008). Likewise, computers allow for emails to be sent in order to increase contact with other people, such as family and friends (Lanigan). ICT devices seem to have become an important way to socialize and connect with each other; however, they can also serve as a distraction to our present responsibilities or engagements. The effects, both positive and negative, are not different in the family. Technology devices surely "have become part of the landscape of family life" (Hughes & Hans, 2001, p. 777).

Family Technology Usage

Hughes and Hans (2001) in reference to technological developments stated, "the American family during the past 25 years has entered a new world of rapid change" (p. 776).

Every day, people are exposed to so much in the world of technology that it has become a new norm. Technological upgrades and innovations are the new standard. As a result, "the consumption of new information and communication technologies in the household has become a matter of increasing concern for academic research" (Hynes 2005, p. 3). There seems to be no context, no matter how personal or private, that is not touched by the influence of technology. The concerning part is that sometimes these influences are not acknowledged right away because the integration of technology is so gradual, yet powerful. "The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it" (Weiser, 1991, p. 66). Subsequently, the consequences of excessive technology consumption may be overlooked.

Digital Communication

In one of the most recent studies on technology use in the family context, Lanigan (2009) reported, (a) 61.8% of American households own computers, (b) 87.6% of them have Internet access, (c) as of January 2008, there were 253,353,579 wireless cell phone subscribers, and (d) 90% of people with a cell phone said they always have their phone with them. These numbers are an increase from statistics of technology usage merely a decade ago.

With the increasing pervasiveness of technology in family life, it is important to note "the significance of communication technologies lies in their role in providing links between and within households and between households and the outside world" (Dickinson 2001, p. 241). The use of technology to communicate is not simply an alternate means families utilize to interact with one another; rather they "represent a qualitative change in how family communication is conducted" (Lanigan, 2009, p 589). Being able to communicate electronically with such ease and efficiency has great benefits. For example, to the military family or to the

family who has moved across the country, electronic communication has become rather commonplace (Christensen, 2009). Use among family members gathered in person, however, may have varying degrees of benefits. Technology is an ever-growing distraction, which can set the stage for an environment that is inhospitable to spending quality family time together. Communications use, such as cell phones, more than computer use, is linked to increased distress and decreased family satisfaction as well as increases in negative work-to-family or family-to-work spillover in individuals (Chesley, 2005). People no longer leave work at the office, nor can they leave home at home with technology that creates constant connection between a person and the outside world. Clearly, technology has succeeded in weaving itself through the complexities of people's lives and relationships.

Family Relationships

Relationships are a specific component of the family that may be affected by the presence of technology in the home. "Relational bonds are substantially weakened when attractions to other relationships, either family or friends, become stronger than attractions within the family relationship" (Orthner, 1991, p. 294). Technology is a tool that can be used to interact with people outside of the immediate family at any time and in any place. When this tool is used to connect family members in new ways, such as providing the opportunity for grooming calls when one is running errands or between appointments, this can strengthen family bonds (Lanigan, 2009). The positive side of technology within the family has been acknowledged numerous times in the research. ICT devices can aid communication with family members while they are apart, planning, educating, and gaining a better global understanding (Hughes & Hans, 2001). In addition, using ICT devices to synchronize family members' schedules can help increase efficiency and even a sense of family solidarity (Wajman et al., 2008). It is also

possible for technology use to increase connectedness. In fact, Christensen (2009) described this process as "connected presence" (p. 433). This allows family members to experience closeness when they are not constantly together. In general, the use of these devices increases connectability when family members are away from each other (Lanigan, 2009).

Increasing technology usage is good when linking family members to each other, but may have a negative effect when it causes isolation (Watt & White, 1999). When it comes to relationship quality, face-to-face contact is still a more effective way of communicating and strengthening family relationships than forms of technology (Baym, Zhang, Kunkel, Ledbetter, & Lin, 2007). In order to build and maintain healthy relationships, choices that determine how one uses one's time must be regulated, and ICT devices can affect the way people choose to use their time (Wajcman et al., 2008). The permeability of family boundaries have been affected by ICT devices when it comes to work-family spill over, real and private world boundaries being blurred, and the availability of unrestricted access to knowledge through the Internet, which may not be consistent to family values and teachings (Lanigan, 2009). Watt and White (1999) found that greater frequency of adolescents constantly communicating with others outside of the family was negatively related to the time they spend with their family and perceived family closeness. With constant access to and use of technology, individual interests may supersede those of the family. Orthner and Mancini (1991) discovered that joint interests are very important to the strengthening of family bonds. In 1999, individual time or alone time increased by 23% with the addition of a computer to a family, which resulted in less time sleeping and interacting with one's family (Watt & White). According to the Circumplex Model, reductions in family interactions may reduce feelings of family connectedness (Olson, 2000). Systems theory gives

hope to maintaining healthy family relationships by recognizing "common activities and interests enforce boundaries around the family relationship" (Orthner & Mancini, 1991, p. 297).

Family Time

The family is central to the healthy development of the next generation and to society as a whole. Stronger families are a key element in creating a stronger society (Agate et al., 2009). The time family members spend together and the factors that may affect this have been studied in order to preserve such valuable experiences and growth, which occur therein.

Interaction

Research shows that choosing to use one's time to interact with other family members yields many positive benefits to the individual and his or her family (Zabriskie & McCormick, 2003). Holman and Jacquart (1988) reported that spending time together is a primary characteristic of strong families. According to Zabriskie and McCormick (2003), families continually interact because they seek stability. Family functioning, family relationships, and family connectedness are all the foundation *of stability* upon which the family is built. By spending time together as a family, family functioning, interaction, communication, and cohesion are strengthened (Shaw & Dawson, 2001). Alone time, however, has been shown to lead to lower levels of marital satisfaction (Orthner & Mancini, 1991). Orthner and Mancini also found that, for the purposes of spending time with one's family and companionship with one's spouse, adults all claimed that they participated in leisure (1991). Leisure time is one specific example of time wherein families can spend time together interacting. By choosing to spend time together with families participating in activities, this interaction with one another yields many positive outcomes (Holman & Jacquart, 1988). When family members choose to participate in activities with one another, they have the opportunity to communicate and bond

(Zabriskie & McCormick, 2003), and likely establish stronger feelings of connectedness. However, *leisure time* isn't an exclusive term. For example, many mothers may find that spending leisure time with their families is actually more obligatory than voluntary and more work than fun (Shaw & Dawson, 2001). Kelly (1997) stated "I am not sure that what people mean by 'leisure' and 'family' is very important. I am sure, however, that what people do together is central to life (p. 134)." The important thing is not how people define leisure or family; the important thing is families, or couples, spending time together engaging with one another through activity and communication. Family interaction, during time spent together, includes a wide variety of conflict, distribution of household tasks and roles, and communication (Orthner & Mancini, 1991).

Communication

The more time couples and families spend together, the more opportunity there is for communication. In fact, Orthner and Mancini (1991) found that "the more couples did together, the more likely they were to communicate and as a part of that, argue (p. 291)." They also clarified, however, that arguing was an indicator of healthy mechanisms for reducing family tension and disagreements. Communication in all forms, therefore, is important to healthy families (Orthner & Mancini). Spending time together is a facilitator of communication (Shaw & Dawson, 2001). Lee et al.'s (2001) descriptions of connectedness indicated a positive feeling, which can help a person create more satisfying relationships. Although doing things together is correlated with positive feelings of connectedness and marital satisfaction, communication is even more strongly correlated with positive family and marital outcomes. Doing things together is "more conducive to optimal communication… and leads to increased marital satisfaction" (Johnson, 2006, p 71).

Communication during family time is also key to building relationships (Olson & DeFrain, 1994). Time spent together facilitates the opportunity for communication to take place, and as a result can strengthen family bonds. Olson and DeFrain found that families with better communication skills were more balanced and, therefore, functioned better. On the other hand, a lack of communication had a negative effect on family relationships. Doing things together without high levels of communication had little to no relationship to marital satisfaction (Holman & Jacquart, 1988). It is important family members spend time, quite frequently, communicating (Holman & Jacquart, 1988) and interacting with one another (Shaw & Dawson, 1991). Positive communication and spending time together were listed by Olson and DeFrain as two of the six major strengths of families (1994).

Summary

Family Systems theory recognizes that families are a system of individual members who work together to maintain stability and actively seek family goals (Zabriskie & McCormick, 2003). The Family Circumplex Model is a derivative of Family Sytems theory. Within the Circumplex Model, findings indicate that the dimensions of cohesion and adaptability, with the facilitating dimension of communication, have a curvilinear relationship, therefore, showing that balanced families are higher functioning than families with extremes in any dimension (Olson & DeFrain, 1994). One level, or dimension, of cohesion is connectedness.

Spousal connectedness is an important component of marital satisfaction, and in the context of families, healthy family functioning. Within the family, technology is taking increasing attention of family members and is used to complete an increasing number of tasks. Spending time as a family provides opportunities to strengthen couples and families and to communicate. Communication is essential to getting the most out of the time families spend in

activities together (Holman & Jacquart, 1988). Given the increased presence of technology in daily life and the potential negative impacts of its excessive use during couple and family time, it is important to better understand the relationship between spousal connectedness and personal ICT device usage.

Chapter 3

Methods

This chapter will present the methods needed to complete the study. The primary problem of this study is to examine the relationship between personal ICT device use and couple connectedness. Two sub-problems of the study are to determine if satisfaction with personal and spousal ICT device usage mediates the relationship between ICT usage patterns and couple connectedness and to determine if the relationship between ICT device usage patterns and spousal connectedness is moderated by communication. The following sections will include: (a) the study sample, (b) instrumentation, (c) procedures, and (d) analysis.

Sample

The sample will be drawn from a population of married individuals who are living together in the same household with their spouse and are at least 21 years of age. This will include those with and without children. This study will collect data from both males and females. The results, however, are not intended to match husbands with wives from the same household.

Instrumentation

Several scales and other items will be used to collect the data for this study.

Connectedness

Feelings of connectedness between spouses will be measured using the Social Connectedness Scale (Lee, Draper, & Lee, 2001) (Appendix A-1c). The reliability of this scale has a Cronbach's Alpha of .902. There are ten items with a 7 point Likert Scale response format. Sample questions include: (a) I feel distant from my spouse, (b) I do not feel like I can relate to my spouse most of the time, and (c) I feel like an outsider with my spouse.

Personal and Spousal ICT Device Use

Personal and spousal ICT device usage, in the context of *when with one's spouse*, will be measured by a 19-item questionnaire designed to understand the type, frequency, and duration of ICT usage (Appendix A-1d). Examples of the types of questions to be used include: (a) I initiate use of my personal ICT device while we are in conversation, (b) I allow my personal ICT device to interrupt our conversations, (c) I initiate use of my personal ICT device during meal time, (d) I allow my personal ICT device to interrupt during meal time, (e) I initiate use of my personal ICT device while we're engaged in an activity, (f) I allow my personal ICT device to interrupt an activity we're engaged in, (g) I initiate use of my personal ICT device while we are in bed, (i) I respond to audible alerts from my personal ICT device. Respondents will indicate whether or not they initiate or respond to their devices in the various situations, and then indicate how frequently and for how long they use the devices. The same questions will then be asked about the participants' perception of spousal use. The scale was developed by the researcher, and was both piloted and presented to a panel of experts. Modifications were made to the scale based on feedback from the panel of experts and comments from the pilot study participants.

Satisfaction with Personal and Spousal ICT Device Usage

Satisfaction with personal and spousal ICT device usage will be measured using an additional question after each usage question regarding their personal ICT device use (Appendix A-1d). The stem of each question reads, "How okay are you with this usage" and the respondents will answer on a scale from "Not at all OK" to "More than OK". The scale was also developed by the researcher and was both piloted and presented to a panel of experts. Modifications were made to the scale based on feedback from the panel of experts and comments from the pilot study participants.

Communication

A modified version of Olson's Family Communication scale will be used to measure couples' communication (Appendix A-1e). It has been modified to measure the communication between spouses rather than for the entire family in general. All ten questions from the original scale will be asked which describe communication within the relationship. Sample questions include: (a) I am satisfied with how we communicate with each other, (b) We are both very good listeners, and (c) We express affection to each other. Answers will be ranked on a Likert-like scale from "1" being not at all, to "5" being very well. The internal consistency of this scale has a Chronbach's Alpha of .88.

Demographic Items

Demographic data will be collected to identify the characteristics of the sample (Appendix A-1f). Items will include age, years married, annual household income, education, ethnicity, gender, and family size.

FACES II

Faces II (Olson, Portner & Bell, 1982) will also be included in the questionnaire in order to help to understand the connection between technology usage and family functioning, in terms of cohesion and adaptability (Appendix A-1g).

Procedures

Once IRB permission has been obtained, the questionnaires will be designed using Qualtrics software, and distributed through the survey sampling company Qualtrics. A total of at least 200 questionnaire responses will be collected. Sampling will continue until there is a close to equal number of male and female respondents. It is also desired to obtain a variety of respondents with varying ethnicity, socioeconomic status, and number of years married. This

survey will include directions and a statement informing the participant that their participation is voluntary and that by completing the survey they are giving their consent (Appendix A-1b). All participants will be able to withdraw at any time. Confidentiality is a priority to both the researcher and the survey sampling company. The researcher will not ask the participants for any personal identifiers. The survey sampling company has all of their participants on their panel sign a form informing them that their participation is voluntary, anonymous, and that they will not be contacted again about their responses. They are assigned a unique ID that will allow the researcher to organize the data.

Data Analysis

Once data is collected and checked for input errors, it will be analyzed using SPSS. An index score for personal and spousal ICT device usage will be calculated using the frequency and duration responses. A total score will also be calculated for satisfaction with usage. A connectedness score will be calculated from the Social Connectedness Scale. A communication score will be calculated from the Family Communication scale. In order to find significant relationships, zero-order correlations will be initially calculated and then each significant independent variable will be tested against the dependent variable using regression analyses. If there are significant relationships between the independent and the dependent variables, an examination of data will be done in order to determine whether satisfaction with personal or spousal ICT device usage is a moderating factor by looking for an interaction. Also, a path analysis will be performed to determine if communication is a mediating factor between spousal connectedness and personal or spousal ICT device usage.

References

Agate, J. R., Zabriskie, R. B., Agate, S. T., & Poff, R. (2009). Family leisure satisfaction and satisfaction with family life. *Journal of Leisure Research, 41*(2), 205-223.

Baym, N. K., Zhang, Y. B., Kunkel, A., Ledbetter, A., & Lin, M. (2007). Relational quality and media use in interpersonal relationships. *New Media & Society, 9*(5), 735-752. doi:10.1177/1461444807080339 .

Berg, E. C., Trost, M., Schneider, I. E., & Allison, M. T. (2001). Dyadic exploration of the relationship of leisure satisfaction, leisure time, and gender to relationship satisfaction. *Leisure Sciences, 23*, 35-46.

Busby, D. M., Holman, T. B., & Taniguchi, N. (2001). RELATE: Relationship evaluation for the individual, cultural, and couple contexts. *Family Relations, 50*, 308-316.

Chesley, N. (2005). Blurring boundaries? Linking technology use, spillover, individual distress, and family satisfaction. *Journal of Marriage and Family, 67*, 1237-1248.

Christensen, T. H. (2009). 'Connected presence' in distributed family life. *New Media & Society, 11*(3), 433-451.

Coyne, S. M., Stockdale, L., Busby, D., Iverson, B., & Grant, D. M. (In Press). “I Luv U :)”: A descriptive study on media use in individuals involved in romantic relationships. In publication process.

Crandell, T. L., Crandell, C. H. & Vander Zanden, J. W. (2009). Human Development, Ninth Edition. New York: McGraw Hill.

DeFrain, J., & Asay, S. M. (2007). Strong families around the world: An introduction to the family strengths perspective. *Marriage and Family Review, 41*(1/2), 1-10.

Dickinson, R., Murcott, A., Eldridge J., Leader, S. (2001). Breakfast, time, and "breakfast time": Television, food, and the household organization of consumption. *Television & New Media, 2*(3), 235-256.

Disney, H., & Bateman, G. (1996). Healthy families and relationships. *Family Matters,* (44), 8-11.

Goodale, T., & Godbey, G. (1988). The evolution of leisure. State College, PA: Venture Publishing.

Green, G. (1991). Evaluating Faces-III and the Circumplex Model. *Family Process, 30*(1), 55-73.

Holman, T. B., & Jacquart, M. (1988). Leisure-activity patterns and marital satisfaction: A further test. *Journal of Marriage and the Family, 50*(1), 69-77.

Hughes, R., & Hans, J. D. (2001). Computers, the internet, and families - A review of the role new technology plays in family life. *Journal of Family Issues, 22*(6), 776-790.

Hynes, D. (2005). Multimedia consumption & use in the household setting. Unpublished Thesis. Dublin City University, Ireland: School of Communications.

Johnson, H. (2006). The contribution of couple leisure involvement, leisure time, and leisure satisfaction to marital satisfaction. *Marriage & Family Review, 40*(1), 69-91.

Kelly, J. R. (1997). Changing issues in leisure-family research----again. *Journal of Leisure Research, 29*(1), 132-134.

Lanigan, J. D. (2009). A sociotechnological model for family research and intervention: How information and communication technologies affect family life. *Marriage & Family Review, 45*(6-8), 587-609.

Lee, R., Draper, M., & Lee, S. (2001). Social connectedness, dysfunctional interpersonal

behaviors, and psychological distress: Testing a mediator model. *Journal of Counseling Psychology, 48,* 310-318.

Lee, R. M., & Robbins, S. B. (1995). Measuring belongingness: The social connectedness and social assurance scales. *Journal of Counseling Psychology, 42*(2), 232-241.

McGinty, M. (2001). Suit yourself. *Communications of the ACM, 44*(9), 21-23.

Olson, D. H. (2000). Circumplex model of marital and family systems. *Journal of Family Therapy, 22,* 144-167.

Olson, D. H., & DeFrain, J. (1994). *Marriage and the family: Diversity and strengths*. Mountainview, CA: Mayfield Publishing Company.

Olson, D. H., Gorall, D. M., & Tiesel, J. W. (2004). *Faces IV Package.* Minneapolis, MN: Life Innovations.

Olson, D. H., Portner, J., & Bell, R. (1982). FACES II: Family adaptability and cohesion evaluation scales. St. Paul, MN: Family Social Science, University of Minnesota.

Orthner, D. K. (1976). Patterns of Leisure and Marital Interaction. *Journal of Leisure Research, 8*(2), 98-111.

Orthner, D. K., & Mancini, J. A. (1991). Benefits of leisure for family bonding. In B. L. Driver, P. J. Brown, & G. L. Peterson (Eds.), Benefits of leisure. (pp. 289-301). State College, PA: Venture Publishing.

Pettigrew, J. (2009). Text messaging and connectedness within close interpersonal relationships. *Marriage & Family Review, 45,* 697-716.

Shaw, S.M. (1997). Controversies and contradictions in family leisure: An analysis of conflicting paradigms. *Journal of Leisure Research, 29*(1), 98-112.

Shaw, S.M., & Dawson, D. (2001). Purposive leisure: Examining parental discourses on

family activites. *Leisure Sciences, 23*(4), 217-231.

Wajcman, J., Bittman, M., & Brown, J. E. (2008). Families without borders: Mobile phones, connectedness and work-home divisions. *Sociology, 42*(4), 635-652.

Watt, D., & White, J. M. (1999). Computers and the family life: A family development perspective. *Journal of Comparative Family Studies, 30*(1), 1-15.

Weiser, M. (1991). The computer for the 21st century. *Scientific American, 265*(9), 66-75.

White, J. M., & Klein D. M.(2008) The family life course developmental framework. Family Theories, 3rd edition. (pp 121-149). Thousand Oaks, CA: Sage Publications

Zabriskie, R.B. (2001). Family recreation: How can we make a difference? *Parks and Recreation, 36*(10), 30-42.

Zabriskie, R. B., & McCormick, B. P. (2003). Parent and child perspectives of family leisure involvement and satisfaction with family life. *Journal of Leisure Research, 35*(2), 163-189.

Appendix A-1a

Sociotechnological Model

by 916427733] At: 18:01 19 March 2011

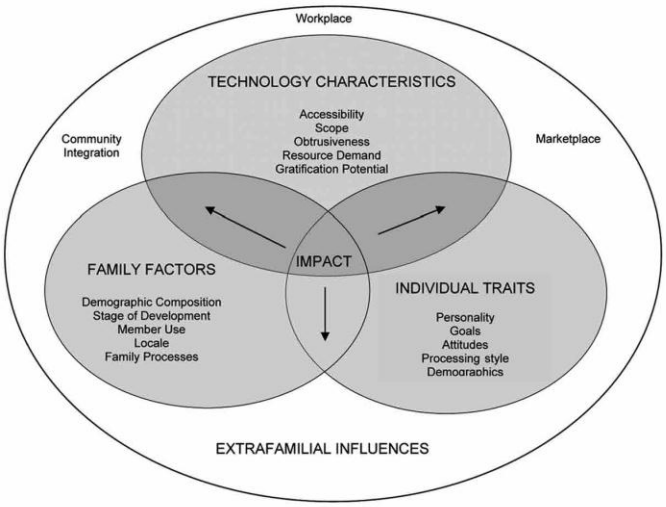


FIGURE 1 Sociotechnological family framework.

Appendix A-1b

Informed Consent

Informed Consent

This research study is being conducted by Chelsea Hutchings, a graduate student at Brigham Young University to determine the relationship between spousal connectedness and personal ICT device usage. You were invited to participate because you are a married person, and this is a study of spouses.

Procedures

If you agree to participate in this research study, the following will occur:

- you will be given a questionnaire to complete
- total time commitment will be about 20 minutes, or however long it takes to complete the questionnaire

Risks/Discomforts

There are no known risks for participation in this study. However, you may feel some discomfort when answering questions about personal feelings. If you feel uncomfortable about answering a particular question, you may choose to decline or excuse yourself from the study.

Benefits

There will be no direct benefits to you. However, it is hoped that through your participation researchers will learn more about spousal connectedness and personal ICT device use.

Confidentiality

The research data will be collected anonymously, and kept in a secure location, and only the researcher will have access to the data.

Participation

Participation in this research study is voluntary. You have the right to withdraw at anytime or refuse to participate. However, by choosing to complete this survey you imply your consent to participate.

Questions about the Research

If you have questions regarding this study, you may contact Chelsea Hutchings, at 518-728-7114, chelsehoney@gmail.com.

Questions about your Rights as Research Participants

If you have questions regarding your rights as a research participant, you may contact IRB Administrator, (801) 422-1461, A-285 ASB Campus Drive, Brigham Young University, Provo, UT 84602, irb@byu.edu.

I have read and understood the above consent and desire of my own free will to participate in this study.

Appendix A-1c

Connectedness Scales

Connectedness

On a scale of 1 to 7, one being disagree and seven being agree, please check the box which describes to what degree you agree or disagree with the following statements. "Spending time with my spouse" includes time at home, in the car, out in public, with or without your children or other company, etc.

On a typical day while spending time with my spouse,

	Disagree 1	2	3	4	5	6	Agree 7
I feel distant from my spouse.							
I do not feel like I can relate to my spouse most of the time.							
I feel like an outsider with my spouse.							
I feel close to my spouse.							
I am able to relate to my spouse.							
I feel understood by my spouse.							
I see my spouse as friendly and approachable.							
I have little sense of togetherness with my spouse.							

Appendix A-1d

Personal ICT Device Usage

PICTD Usage

An ICT device is any form of technology which can be used by one to obtain information or communication with others. Examples: cell phone, smart phone, iTouches and iPads with internet connection, desktop and laptop computers, PDA's, etc.

Please respond to the following set of items by referring to time you spend with your spouse, on a typical day during the following specific situations. This can be at home, in the car, out in public, with or without your children or other company, etc. Your responses are a best estimate of your actual usage. For example… On a typical day with my spouse I allow interruptions from my ICT device while we are in conversation approximately 2 times, and the interruptions last approximately 5 minutes total.

These questions will provide a global understanding of you and your spouse's personal ICT device usage whenever you are together. The answer sheet is included, following the questions.

On a typical day, while I am spending time with my spouse:

1. *I* initiate use of my personal ICT device while we are in conversation.
2. *I* allow my personal ICT device to interrupt our conversations.
3. *I* initiate use of my personal ICT device during meal time.
4. *I* allow my personal ICT device to interrupt during meal time.
5. *I* initiate use of my personal ICT device while we're engaged in an activity.
6. *I* allow my personal ICT device to interrupt an activity we're engaged in.
7. *I* initiate use of my personal ICT device while we are in bed.
8. *I* respond to my personal ICT device while we are in bed.
9. *I* respond to audible alerts from my personal ICT device.
10. *We* use our ICT devices simultaneously.
11. My *spouse* initiates use of his/her personal ICT device while we are in conversation.
12. My *spouse* allows his/her personal ICT device to interrupt our conversations.
13. My *spouse* initiates use of his/her personal ICT device during meal time.
14. My *spouse* allows his/her personal ICT device to interrupt during meal time.
15. My *spouse* initiates use of his/her personal ICT device while we're engaged in an activity.
16. My *spouse* allows his/her personal ICT device to interrupt an activity we're engaged in.
17. My *spouse* initiates use of his/her personal ICT device while we are in bed.
18. My *spouse* responds to his/her personal ICT device while we are in bed.
19. My s*pouse* responds to audible alerts from his/her personal ICT device.

Please check the appropriate box for each category: Frequency, Duration, and Satisfaction.

	FREQUENCY: *How many times is usage initiated or interruption allowed in one day?*					**DURATION:** *Total usage time for situation, per day*						**SATISFACTION:** *How 'ok' are you with this usage pattern?*				
	Never	**1-5 times**	**6-10 times**	**11-15 times**	**16 or more times**	**Never**	**10 min or less**	**11-20 min**	**21-30 min**	**31-40 min**	**41 min or more**	**Not at all OK 1**	**2**	**OK 3**	**4**	**More than OK 5**
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19																

20. Please circle your overall satisfaction with YOUR personal ICT device usage on a scale of 1-5, 1 being dissatisfied and 5 being satisfied:

1 2 3 4 5

21. Please circle your overall satisfaction with YOUR *SPOUSE'S* personal ICT device usage on a scale of 1-5, 1 being dissatisfied and 5 being satisfied:

1 2 3 4 5

Appendix A-1e

Communication Scale

Communication Scale

Please check the box which describes how you feel the following statements describe communication between you and your spouse. Please think in the context of "on a typical day with my spouse…"

	Does not describe us at all 1	2	3	4	Describes us very well 5
I am satisfied with how we communicate with each other.					
We are both very good listeners.					
We express affection to each other.					
We are able to ask each other for what we want.					
We can calmly discuss problems with each other.					
We discuss our ideas and beliefs with each other.					
When we ask questions of each other, we get honest answers.					
We try to understand each other's feelings.					
When angry, we seldom say negative things about each other.					
We express our true feelings to each other.					

Appendix A-1f

Demographics

Demographics

What is your gender?
(m/f)

What is your age?
(____ years)

How long have you been married?
(_____ years)

How long have you known your spouse?
(_____ years)

How many children (including step-children, etc.) do you have?
(_____)

What are the ages of your youngest and oldest child.
Youngest (_____ years)
Oldest (_____ years)

What is your ethnicity?
(Caucasian, African American, Hispanic, Asian, Pacific Islander, Native American, Other-please specify)

What is your annual household income between you and your spouse?
(Less that 10,000, 10,001-20,000, 20,001-30,000, 30,001-40,000, 40,001-50,000, 50,001-60,000, 60,001-70,000, 70,001-80,000, 80,001-90,000, 90,001-100,000, 100,001+)

What is the highest level of education you have achieved?
(Some high school, High School Degree, GED, Some undergraduate school, Undergraduate degree, Some postgraduate school, Master's Degree, PhD, Trade School)

What is the highest level of education your spouse has achieved?
(Some high school, High School Degree, GED, Some undergraduate school, Undergraduate degree, Some postgraduate school, Master's Degree, PhD, Trade School)

Appendix A-1g

FACES II

Family Adaptability and Cohesion Evaluation Scales

Please answer the following questions in reference to your family currently. Please be as open and honest as possible. All responses are strictly confidential. Use the following scale:

1- Almost never
2- Once in a while
3- Sometimes
4- Frequently
5- Almost always

Describe your family:

___ 1. Family members are supportive of each other during difficult times.
___ 2. In our family, it is easy for everyone to express his/her opinion.
___ 3. It is easier to discuss problems with people outside the family than with other family members.
___ 4. Each family member has input regarding major family decisions.
___ 5. Our family gathers together in the same room.
___ 6. Children have a say in their discipline.
___ 7. Our family does things together.
___ 8. Family members discuss problems and feel good about the solutions.
___ 9. In our family, everyone goes his/her own way.
___ 10. We shift household responsibilities from person to person.
___ 11. Family members know each other's close friends.
___ 12. It is hard to know what the rules are in our family.
___ 13. Family members consult other family members on personal decisions.
___ 14. Family members say what they want.
___ 15. We have difficulty thinking of things to do as a family.
___ 16. In solving problems, the children's suggestions are followed.
___ 17. Family members feel very close to each other.
___ 18. Discipline is fair in our family.
___ 19. Family members feel closer to people outside the family than to other family members.
___ 20. Our family tries new ways of dealing with problems.
___ 21. Family members go along with what the family decides to do.
___ 22. In our family, everyone shares responsibilities.
___ 23. Family members like to spend their free time with each other.
___ 24. It is difficult to get a rule changes in our family.
___ 25. Family members avoid each other at home.
___ 26. When problems arise, we compromise.
___ 27. We approve of each other's friends.
___ 28. Family members are afraid to say what is on their minds.
___ 29. Family members pair up rather than do things as a total family.
___ 30. Family members share interests and hobbies with each other.