"I'M JUST TEXTING TO SAY HELLO":

EXAMINING HOW PARENTS' ACCESS TO AND USE OF INFORMATION COMMUNICATION TECHNOLOGIES INFLUENCES SATISFACTION AMONG ADULT CHILDREN

BY

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Abstract

Advancements in technology have altered how and when communication occurs between individuals in a relationship. Although research has investigated how new information communication technologies (ICTs) affect peer relationships (Yoon, 2003) and parents' communication with their young children (Devitt & Roker, 2009), how information communication technologies influence parent-adult child relationships is less clear. By examining contradictory premises of media multiplexity theory (Haythornthwaite, 2005) and the theory of electronic propinquity (Korzenny, 1978), this study tested whether parental access to ICTs influences communication and relationship satisfaction for adult children and to what extent. This study also examined a new use of ICTs – connectedness – and analyzed how parents' reported connectedness influences parent-adult child relationships.

The results indicate that the number of media parents and adult children utilize to maintain their relationship does modestly influence satisfaction. In addition, satisfaction is greater when parents act more in line with a connected mode of communicating and when they are more communicatively competent. These results provide families, therapists, researchers, and educators with a better understanding of how ICTs influence family relationships.

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Chapter One:

Introduction and Rationale

Advances in information communication technologies influence human relationships (Chesebro, 2000; Kedzie, 1997; McQuillen, 2003; Stafford & Hillyer, 2012). The internet has created new avenues for the initiation of relationships (Finkel, Eastwick, Karney, Reis, & Sprecher, 2012). Likewise, email, instant messaging, and mobile phones have changed how existing relationships are maintained (Dainton & Aylor, 2002; Kim, Kim, Park & Rice, 2007; Licoppe, 2004). Studies examining how information communication technologies affect relationships abound. However, many of these studies focus on how information communication technologies influence friendship relationships among teenagers and young adults (Igarashi, Takai, & Yoshida, 2005; Mansson & Myers, 2011; Yoon, 2003), romantic relationships among young adults (Duran, Kelly, & Rotaru, 2011; Jin & Pena, 2010; Miller-Ott, Kelly, & Duran, 2012), or familial relationships between parents and their young or teenage children (Devitt & Roker, 2009).

This study addresses the gap in this area by examining information communication technology use among families in the middle years. Although individual differences in age of marriage and age of parenthood make it difficult to define the middle years (Allen, Blieszner, & Roberto, 2000), the family life cycle model created by DeGenova, Stinnett, and Stinnett (2011) places it as the period that occurs after the children have left the family home and before the parents retire. Thus, children are usually between 18 and their mid-30s during this time. The term "young adult," which refers to individuals aged 18-29 (Pew Research Center, 2012; Smith, 2011) is used in this study.

Family members choose from multiple media (Baym, Zhang, & Lin, 2004; Licoppe, 2004) or what some researchers call a "communication repertoire" (Haythornthwaite, 2002; Linke, 2011) when the need or want to communicate arises. Both the theory of electronic propinquity (TEP) (Korzenny, 1978) and media multiplexity theory (MMT) (Haythornthwaite, 2005) argue that a relationship exists between communication repertoire size and satisfaction variables (such as communication and relationship satisfaction). However, much of the work on both of these theories has focused on groups (Haythornthwaite, 2000; Korzenny & Bauer, 1981), friendship relationships (Ledbetter & Kuznekoff, 2012; Miczo, Mariani, & Donahue, 2011) or non-specific interpersonal relationships (Ramirez, Dimmick, Feaster, & Lin, 2008). This study brings this work into the context of families by examining what influence communication repertoire size has on both communication satisfaction and relationship satisfaction between parents and their young adult children. Communication satisfaction refers to the extent that communication interactions fulfill expectations (Hecht, 1978). Relationship satisfaction has been referred to as one's contentment with a relationship (Hendrick, 1988) or a global feeling about the relationship brought on by pleasure or pain (Beatty & Dobos, 1992). Satisfaction is important in relationships because negative assessments can hurt the long-term stability of the relationship (Gottman & Carrere, 1994).

Of course, communication and relationship satisfaction are influenced by several communication variables beyond medium choice. Quantity and quality matter as well. Quantity has been operationalized as both the duration and the frequency of contact (Emmers-Sommer, 2004). Quality, for this study, is examined using interpersonal communication competence (Rubin & Martin, 1994). The influence of these variables on satisfaction must be considered in order to obtain a clear understanding of the predictive power of communication repertoire size.

Therefore, the overarching goal of this study is to examine how much communication repertoire size influences communication and relationship satisfaction over and above the quality and quantity factors (i.e., duration, frequency, and communication competence).

The ways in which particular media in the communication repertoire are used may also influence parent-young adult child relationships. The portability of mobile phones, the anywhere, anytime accessibility of text messaging, and the integration of social networking sites with cell phones has led young people to desire constant connection with those whom they are close (Ling & Yttri, 2002). Liccope (2004) calls this constant connection "connected mode" (p. 148). Research suggests, however, that parents utilize fewer channels than their adult children do and thus are not as connected (Licoppe, 2004; Pew, 2012). Therefore, this study examines whether young adult children's desire for connectedness and parents' reported accessibility interact to influence both communication and relationship satisfaction.

The results of this study should ultimately provide a better understanding of how information communication technology availability and use influence family relationships. This study also provides insight into whether differences in access to information communication technologies are viewed negatively within the family context. Families and therapists will be able to utilize this information to aid with communication problems among family members. Likewise, parents and practioners can utilize the results from this study to understand why young adult children are (dis)satisfied with communication and relations with parents. Researchers should also benefit from this study because the contradictions between TEP and MMT are explored, understanding of the "connected mode" of communication is advanced, and work on young people's use of information communication technologies is furthered by examining a slightly older group of participants than is typically studied in this area.

The subsequent chapter provides a review of relevant literature, examining families in the middle years, providing explanations of MMT and TEP, and detailing the literature on connectedness. The hypotheses and research questions that were assessed in this study are also presented. Chapter Three details the methodology utilized in this research, and Chapter Four provides the results of the hypotheses and research questions. Chapter Five discusses the implications of the findings and also notes the limitations of this study, as well as directions for future research.

Chapter Two:

Literature Review

Families in the Middle Years

Research into families in their middle years, after the children are grown, but before the parents become elderly, was largely overlooked until the 1990s (Cooney, 2000). Studies have consistently shown that parent-child relationships extend into adulthood (Aquilino, 1994; Mancini & Blieszner, 1989). Indeed, research has found that nearly 80% of adult children have close relationships with their parents (Lye, 1996). Research has also indicated that adult children aged 18 to 22 often rely on their parents for emotional and financial support (Padilla-Walker, Nelson, & Carroll, 2012; Schrodt et al., 2009). Schrodt et al. (2009) note that researchers are beginning to believe that "family socialization processes continue well into young adulthood" (p. 854; also see Nelson et al., 2007). Female adult children may be more likely to have close relationships with their parents. Forward, Sansom-Livolsi, and McGovern (2008) found that female college students are more dependent on their fathers than are male college students on their mothers. Forward et al. (2008) believe daughters may be more dependent on their parents than males because males are raised to be more independent.

Arnett's (2007a) coining of the phrase "emerging adulthood" has also led to increased scholarship about families in the middle years. Emerging adulthood refers to a phase between adolescence and adulthood in which those aged 18-25 (Arnett, 2007a) – or under 30 for those who went to college (Nelson et al., 2007) – focus on self-development before committing to their adult roles (Arnett & Eisenberg, 2007). Arnett (2007b), in arguing for the need for this term, noted that the lives of most 20-year-olds are "vastly different" than those of 30 and 40-year-olds (p. 81). During the emerging adult period, young adults attempt to figure out who they are and

try out various jobs and romantic partners in attempts to find a position and partner they will stay with long term (Arnett, 2007a). The emerging adulthood stage of life largely only applies to young adults in industrialized and developed countries, where marriage and parenthood are delayed, partially due to increased years of schooling (Arnett, 2007a; Arnett & Eisenberg, 2007).

Research into the relationships of emerging adults and their parents includes Buhl's (2007) two-phase study that examined young adults while they were still in college and then several years after they had graduated. Buhl (2007) found that intimacy with parents increased as the adult children began full-time employment. This is despite Sneed et al.'s (2006) finding that contact with family decreases during emerging adulthood. Skilled parent-child communication continues to be important during this time. For example, Serido, Shim, Mishra, and Tang (2010) found that quality of parent communication about finances was negatively associated with college students' psychological distress and positively associated with their well-being. Additionally, Nelson, Padilla-Walker, Christensen, Evans, and Carroll (2011) examined how parents' parenting styles during emerging adulthood affected outcomes. They examined father and mother parenting styles separately and found that use of a controlling, yet unresponsive, style by fathers and mothers was negatively associated with feelings of self-worth and positively associated with levels of depression in the emerging adults (Nelson et al., 2011).

Theoretical Foundation One: Media Multiplexity Theory

As evidenced, communication between parents and their young adult children is important. Scholars across many disciplines studied parent-adult child relationships and communication with some intensity in the 1990s (for a comprehensive review see Lye, 1996). One area of interest in these earlier studies was the medium used for contact. At that time, telephone calls, letters, and visits were the most frequent means of contact (Lye, 1996). Since

that time, however, the internet has opened up new avenues for communicating, as has the increased popularity and pervasiveness of mobile phones. Family members now have more media to choose from when communicating. In the following pages, two theories that examine available media alternatives are discussed.

Haythornthwaite's (2005) media multiplexity theory (MMT) stems from research conducted using a social network approach to communication, which examines who communicates with whom in a group, how often they communicate, what media they use to communicate, and what they communicate about. Such research indicates that people tend to form two types of ties with those in the groups to which they belong (such as work groups or learning groups, like classes). Individuals with "weak ties" communicate infrequently and largely for instrumental purposes (Haythornthwaite, 2005). Such individuals are often dissimilar and are members of different social circles, which makes interaction advantageous because it brings new information and resources to each individual (Haythornthwaite, 2000, 2005). "Strong ties," on the other hand, communicate frequently and for a variety of reasons, including social support, instrumental needs, companionship, and advice (Haythornthwaite, 2000, 2005).

In her research, Haythornthwaite (2005) and her colleagues (e.g., Haythornthwaite & Wellman, 1998) have found that those with stronger ties use more media to communicate than those with weaker ties. For example, intimacy of friendship has been found to be positively related to communication repertoire size (Haythornthwaite & Wellman, 1998; Igarashi et al., 2005; Van Cleemput, 2010). Thus, the word multiplexity in the theory refers to the number of media used to maintain relations between two individuals (Haythornthwaite, 2000; Haythornthwaite & Wellman, 1998). In addition, strong ties use at least some private media that are just person-to-person while weak ties may only use more public media, like Facebook

(Haythornthwaite, 2005). Haythornthwaite provides several reasons as to why those with closer ties may use more media. First, she argues that individuals with closer ties may have more desire or need to communicate and therefore use more media to help them do so (Haythornthwaite, 2000). In addition, because strong ties communicate for a variety of reasons, an array of media to choose from is more helpful in accomplishing tasks than it would be for those with weak ties who interact for a limited number of reasons (Haythornthwaite, 2000). Research by Dainton and Aylor (2002) supports this idea, as different media were found to be used to accomplish different relationship maintenance tasks in long-distance dating relationships: face-to-face was used for task-related communication, the telephone was used for being open with a partner and providing assurances, the internet was used for positivity and networking, and letters were used for assurances.

Haythornthwaite's (2000) argument that a range of media is helpful for accomplishing a variety of tasks is also supported by examining the affordances different media offer. These affordances fall into six categories: synchronicity, richness, ability to store, replicability, mobility, and reach (Baym, 2010).

Synchronicity. Synchronous media, which involve real-time communication, allow parties to exchange information quickly and make them feel as if they are together even though they are not (Baym, 2010). However, these media are viewed as costly, requiring coordination of time, greater effort, and often times, more money (Dijst, 2009). Asynchronous media, on the other hand, require less effort, and they are less demanding, allowing a person to more carefully manage his or her image (Baym, 2010). However, not all media are easily classified as being synchronous or asynchronous. The speed of text messaging can make it interactive (Mahatanankoon & O'Sullivan, 2008), seeming like a conversation with fast back and forth

messages, or it can resemble something more like email, with the partners sending asynchronous messages as they have time (Faulkner & Culwin, 2005).

Richness. Media richness refers to the extent that social cues are available via a given medium (Baym, 2010; Daft & Lengel, 1986). Phone calls, for example, allow one to hear another's tone of voice, while text messaging does not. Rich media allow complex information to be shared more easily (Daft & Lengel, 1986) and detection of emotions and truth is thought to be easier. The cost is generally that the parties must be available to interact at the same time, which is not always possible. Lean media put the focus on the content of the message and better allow parties to hide emotions they do not wish to share. For example, research suggests that young persons, especially females, find it easier to discuss difficult topics and those that may challenge their image or self-esteem via text message (Mahantanankoon & O'Sullivan, 2008; Yoon, 2003). This includes text messages with family members (Devitt & Roker, 2009). Less rich media are also helpful in other ways. Text messaging allows parties to communicate when a voice call would inconvenience others or when private information needs to be shared and the sender is in public (Faulkner & Culwin, 2005; Lin & Tong, 2007; Pettigrew, 2009).

Ability to store. The ability to store exchanged communication is another factor to consider. Text messages and emails are automatically stored when received. Similarly, Facebook keeps all messages sent and received. On the other hand, storing mobile phone call conversations or the walkie-talkie like conversations of the smartphone application "Haytell" would take more work. In some instances, having a medium that can store communication is useful to have. For example, a stored text message can make a person feel special or loved each time it is viewed. This idea is supported by research that finds that young people, especially females, view certain text messages – typically ones containing compliments or sentiments – like gifts, something they

can keep and treasure to make themselves feel good (Lin & Tong, 2007; Taylor & Harper, 2003). As Rettie (2003) says, "A text can be a small token of esteem that can be saved and reread" (Text Messages section, para 1).

Replicability. Replicability is also a factor. Text messages and emails can be easily forwarded, while an instant message conversation would have to be copied and pasted into an email or new chat conversation to be shared. Discussing something by phone or Skype may be preferable if one does not want the information communicated to be easily shared.

Mobility. Another factor is mobility. Mobility refers to how portable a medium is (Baym, 2010; Ishii, 2006). Highly portable devices such as cell phones offer the anywhere, anytime ability to communicate. One reason that it may be useful to have a mobile media available in a relationship is micro-coordination (Ling & Yttri, 2002; Rettie, 2003). Micro-coordination refers to the communication of changes in set plans, such as when one is running five minutes late or if one wants to meet at a different location than the one planned (Ling & Yttri, 2002).

Reach. Reach refers to how large an audience a user can contact with a single message (Baym, 2010). A limited number of people can be conference-called into a mobile phone call, but thousands of people can be reached with one email. Facebook is another example, as a person can share information with many people at a minimum expenditure of time and effort.

Now that MMT has been described, an examination of work using MMT is necessary. MMT has largely been studied in groups, such as learners in the same class (Haythornthwaite, 2000), users of the same social networking site (Baym & Ledbetter, 2009), or members of the same online gaming network (Ledbetter & Kuznekoff, 2012). More recent work has examined MMT in interpersonal contexts, such as with geographically close friends (Miczo et al., 2011). MMT also seems applicable to family relationships because a family is often defined as and

considered a group (Braithwaite & Baxter, 2006; Koerner & Fitzpatrick, 2002; Soliz, Thorson, & Rittenour, 2009).

Based on families being groups, there should be an association between communication repertoire size and relationship satisfaction within families. Relationship satisfaction refers to a person's happiness with a relationship with another person (Hendrick, 1988). MMT suggests a positive correlation between number of media used and relationship satisfaction among family members since strong ties have been described as "close" others, those who are highly intimate, who share resources, and who have high social influence on each other (Haythornthwaite, 2002, 2005). Thus, interaction between family members who share these characteristics should be expected to be carried out using a greater number of media. Additionally, relational closeness and relationship satisfaction have been found to be positively and moderately correlated, with r = .54 (McManus & Nussbaum, 2011). Intimacy has also been found to be a predictor of relationship satisfaction in close relationships (Anderson & Emmers-Sommer, 2006; Ng & Cheng, 2010).

Based on MMT, communication satisfaction should also be influenced by communication repertoire size. Communication satisfaction reflects the extent that communication interactions fulfill expectations (Hecht, 1978). One reason that MMT should predict communication satisfaction is that intimacy is associated with communication satisfaction (Gottman, 1999). In addition, closeness and communication satisfaction are strongly and positively related, with r = .68, and relationship satisfaction and communication satisfaction are also strongly related (Anderson & Emmers-Sommer, 2006; Punyanunt-Carter, 2007), with a correlation of .76 in one recent study of parent-young child communication (McManus & Nussbaum, 2011).

Theoretical Foundation Two: Electronic Propinquity Theory

Another theory that relates to communication repertoire size is the theory of electronic propinquity (TEP) (Korzenny, 1978). TEP was devised as a theory on mediated communication and stems from research into teleconferencing in organizations (Korzenny, 1978). Electronic propinquity refers to feelings of closeness or of being together that come from communicating via electronic media (Korzenny, 1978). The theory puts forth several axioms and corollaries based on associations and interactions between certain variables including: psychological bandwidth, complexity of information, level of mutual directionality, communication skills of communicators, perceived number of communication rules, and perceived number of choices in channels. Psychological bandwidth refers to the number of senses the communicators have to decipher the information with and is akin to the media richness category described previously (Korzenny, 1978). For example, text messaging allows only the use of sight, but videoconferencing allows the use of sight and sound, while face-to-face communication allows for sight, sound, touch, taste, and smell. Mutual directionality refers to the amount of feedback the medium allows the communicators (Korzenny, 1978). Communication skills are akin to communication competence, while information complexity has been operationalized as task complexity (Korzenny, 1981; Walther & Bazarova, 2008). Perceived number of communication rules refers to the number of rules or regulations a communicator believes pertain to a particular medium while perceived number of choices of channels refers to the number of media a communicator thinks are available to achieve a communication goal (Korzenny, 1978).

Although TEP work has largely focused on organizational or group contexts, as a theory on computer-mediated communication, it should also prove useful in interpersonal settings where persons must choose the media by which to conduct relationships tasks much like

individuals in organizations much choose the media by which to accomplish instrumental tasks. In fact, Korzenny (1978) felt that the theory could apply to "all symbolic human interaction" (p. 4). Additionally, Ramirez et al. (2008) recently found support for the theory in interpersonal settings. In a survey study of college students, Ramirez et al. (2008) found that higher bandwidth channels (i.e., those with more cues) and those with greater mutual directionality (i.e., feedback) were rated as more helpful for keeping in touch and communicating with intimate others than those with lower bandwidths. Thus, instant messaging was rated as better than email and cell phone communication was rated as better than instant messaging.

There are a number of TEP's propositions that relate to the current study. First, Korzenny (1978) predicts that the more communication skills a communicator has, the more electronic propinquity will be perceived. Korzenny (1978) argues that strong communication skills can make up for a narrow bandwidth because individuals with strong communication skills can alter their behaviors to those most effective for that medium. In an experiment testing this idea, Korzenny and Bauer (1981) found a weak correlation between communication skill and psychological propinquity, with $r = .32$. Walther and Bazarova (2008) also found a positive relationship between communication skills and electronic propinquity in an experimental study conducted with undergraduate students.

Korzenny (1978) also predicts that there will be more propinquity when the number of channels is smaller (i.e., the communication repertoire size is small) because having a limited number of channels available leads to less second-guessing about whether another choice would have been better. Korzenny (1978) also argues that expectations play a role because individuals expect more propinquity when there are a greater number of channel choices. Therefore, propinquity is more likely to be achieved when there are a small number of channels available

because it's easier to meet a person's expectations for propinquity. Walther and Bazarova (2008) note that this suggests a psychological contrast effect or "the notion that having comparisons to make drives down ratings of lower-bandwidth media" (p. 626). Subsequent research has supported Korzenny's (1978) idea, as van den Berg and Watt (1991) found that available alternatives significantly influenced students' perceptions of instructional software. Walther and Bazarova's (2008) work also supports this idea, as they found a main effect for presence of media alternatives on electronic propinquity.

In his article detailing the theory, Korzenny (1978) posited that feelings of electronic propinquity should increase communication satisfaction, at least in cases where the interaction was wanted. In an experiment testing the theory, Korzenny and Bauer (1981) found a strong relationship between psychological propinquity and communication satisfaction, as $r = .74$. In addition, Walther and Bazarova (2008) also found support for some of the theory's propositions in relation to communication satisfaction. Of relevance to this study is the finding that the presence of alternative media to choose from did decrease satisfaction for those using the medium with the smallest number of cues available (i.e., the lowest bandwidth) (Walther & Bazarova, 2008).

The number of alternative media (the communication repertoire size) may also influence relationship satisfaction. Communication is a key part of navigating and maintaining relationships, so satisfaction with communication should lead to satisfaction with the relationship as well. Indeed, Punyanunt-Carter (2007) found a correlation between communication satisfaction and relationship satisfaction of .82, so if TEP can be used to predict communication satisfaction, it should adequately predict relationship satisfaction as well.

Overall then, TEP claims that more media lead to less satisfaction, while MMT predicts that more media lead to greater satisfaction. The contradictory propositions and research between MMT and TEP lead to the first research question of this study:

RQ1: Will communication repertoire size be positively or negatively associated with communication and relationship satisfaction?

Influence of Medium Availability on Satisfaction

This study argues that access to and use of information communication technologies influence communication and relationship satisfaction. However, quantity and quality are also components of communication that influence relational outcomes (Anderson & Emmers-Sommer, 2006; Montgomery, 1988). For example, in a survey study of married individuals, Kline and Stafford (2004) found a positive relationship between casual interactions and satisfaction. Schumm, Barnes, Bollman, Jurich, and Bugaighis (1986) surveyed married couples and found that low quality and quantity of communication was associated with decreased satisfaction among wives.

Quantity of communication has been assessed using both its duration and frequency (Emmers-Sommer, 2004; Jin & Pena, 2010). Frequency, which refers to how often interaction occurs between two parties, was studied in the 1990s. At that time, it was found that nearly 70% of adult children had weekly contact with their parents (Lawton, Silverstein, & Bengston, 1994). Schon (2012) similarly found that college-aged women contact their parents about once a week. Duration refers to how much time an interaction or a series of interactions that occur within a close amount of time take. Examples would be a telephone call or an exchange of text messages or emails over the course of a half hour. Jin and Pena (2010) found that both the daily duration and frequency of mobile phone calls among romantic partners were positively associated with

the self-reported relational outcomes of love and commitment. Recent research by Punyanunt-Carter (2008) and Dunleavy, Wanzer, Krezmien, and Ruppel (2011) suggests that quantity of communication is positively associated with communication satisfaction and relationship satisfaction among fathers and adult daughters.

One measure that has been used to make judgments about communication quality is communication competence (Spitzberg, 1988). Communication competence refers to how well one communicates and includes factors such as the appropriateness and effectiveness of the communication (Rubin & Martin, 1994). Most researchers also conceptualize flexibility and being able to adapt communication based on the situation to be important (Knutson & Posirisuk. 2006). Adler and Towne (2003) define communication competence as "achieving one's goals in a manner that, ideally, maintains or enhances the relationship in which it occurs" (p. 30). Flora and Segrin (1999) found that social skill level and relationship satisfaction are positively related. Furthermore, Arroyo and Segrin (2011) found a .44 correlation between perceptions of a friend's communication competence and relationship satisfaction. A survey study by Dunleavy et al. (2011), which examined differences in communication skills between fathers and daughters, also suggests that communication competence influences relationship satisfaction.

Research by Emmers-Sommer (2004) on friendship and romantic relationships found that communication duration and frequency only accounted for 10% of the variance in intimacy and 7% of the variance in relationship satisfaction beyond that explained by communication quality factors, which was 36%. If communication repertoire size also has a relatively small influence on communication and relationship satisfaction, then families and therapists would be best advised to put their efforts into improving communication quality when satisfaction levels are low. If, however, communication repertoire size has a larger influence on satisfaction, families and

therapists would be best advised to find additional information communication technologies that both the adult child and the parent are comfortable with. Additionally, Haythornthwaite and Wellman (1998) found that communication repertoire size and frequency of contact were significantly correlated, so looking at the influence of communication repertoire size beyond that offered by frequency of contact would provide a better understanding of how it affects outcomes. Thus, research questions two and three examined in this study are as follows:

RQ2: How much of the variance in communication satisfaction is explained by communication repertoire size (above that explained by communication competence and quantity of communication)?

RQ3: How much of the variance in relationship satisfaction is explained by communication repertoire size (above that explained by communication competence and quantity of communication)?

Communication Competence as a Moderator?

It seems likely that communication competence could somewhat alter the influence communication repertoire size has on communication and relationship satisfaction, if a significant association is found. Because competent communicators are more aware of others' feelings and thoughts (Rubin & Martin, 1994), they would likely realize their partners' frustrations with being unable to communicate via certain channels. Based on this realization, a competent communicator would likely determine an available channel with characteristics closest to the one the partner desires and offer that channel as a substitute for the desired one. For example, a father may not use text messaging, but he can give his son his email address and promise to check it frequently. Competent communicators may also attempt to make up for or minimize the inconvenience in other ways, such as asking another child what updates have been

posted to the adult child's Facebook page if they do not use Facebook themselves or agreeing to leave occasional encouraging voicemails if they do not use channels such as Facebook, email, or text messaging that allow messages to be stored.

Korzenny's (1978) TEP suggests similar effects of communication skills. As Walther and Bazarova (2008) note, TEP suggests interactions among the variables the theory examines. Specifically, TEP treats communication skill as a moderator of electronic propinquity; propinquity then leads to communication satisfaction (Korzenny, 1978). Korzenny (1978) argues, "The less communication skills, the more need for, e.g., a wide bandwidth for a certain level of propinquity to be considered acceptable" (p. 18). Korzenny (1978) also posits that individuals possessing good communication skills would be able to enact behaviors that make up for a narrow bandwidth, a small number of choices of channels, or the need to communicate highly complex information. Walther and Bazarova (2008) found support for this idea in their study of groups. A significant finding in this study would strengthen the argument that the propositions of TEP apply to interpersonal communication in addition to group and organizational communication. This leads to the first and second hypotheses explored in this study:

H1: Communication competence will moderate the relationship between communication repertoire size and communication satisfaction.

H2: Communication competence will moderate the relationship between communication repertoire size and relationship satisfaction.

Connected Mode

As mentioned previously, information communication technologies are often used to maintain relationships (Aspray & Hayes, 2011; Boneva, Kraut, & Frohlick, 2001; Hall & Baym, 2011; Ishii, 2006; Lenhart, 2010). Lin and Tong (2007), for example, found that two-thirds of their participants' text messages were used for relationship maintenance rather than information exchange. Additionally, Pempek, Yermolayeva, and Calvert (2009) found that maintaining offline relationships was a primary use of Facebook. Research conducted in the last decade has revealed a new use of information communication technologies to maintain relationships. This concept is often called connectedness or connected mode (Kuwabara, Watanabe, Ohguro, Itoh, & Maeda, 2002; Licoppe, 2004; Rettie, 2003) and reflects a feeling of emotional togetherness even when the individuals are not physically together (Licoppe & Smoreda, 2005; Rettie, 2003). Communications in connected mode "help people to be aware of each other" (Rettie, 2003, Connectedness section, para 8). In a qualitative study by Licoppe (2004) about the role of mobile phones in people's daily lives, one interviewee mentioned how these "connected mode" messages indicate to the other person that the relational partner is thinking of him or her.

Although presence has many definitions, Rettie (2003) notes that social presence, or the perception of being together with the other person even though one is not, is not the same as connectedness. Rettie (2003) defines connectedness as more of an "emotional experience" and gives the example of a goodnight text message providing a sense of connectedness even though a text message does not provide much of a sense of social presence (Connectedness section, para 2). Licoppe (2004) compared connected mode with conversation mode; in conversation mode, the goal is to share information or talk, while in connected mode, the purpose is simply to make contact.

Messages that evoke connectedness are greetings, reassurances, and communication where the content of the message is not as important as the fact that communication was initiated (Licoppe, 2004; Rettie, 2003). Two examples Licoppe (2004) presents from his interviewees are: "I miss you" and "I'm thinking of you" (p. 152). Rettie (2003) argues that a new technology that allows parties to listen to music together also creates this sense of connectedness.

Chayko (2008) found that some people are comforted by this sense of constant presence, and Miller-Ott et al. (2012) found that college students who contacted their romantic partner as often as they liked reported greater relationship satisfaction. Rettie (2003) found that an individual's need for connectedness was highest with romantic partners and close family members. Both Licoppe (2004) and Rettie (2003) found that mobile voice calling and text messaging were two popular means to achieve connectedness. Katz and Aakhus (2002) have noted how mobile phone use can encourage people to desire perpetual contact. As more people begin to use social networking sites on their mobile phones, that medium, too, may come to be used to achieve connectedness. Many smartphones now alert users when a Facebook post has been responded to or when a message has arrived.

The idea that young persons are more likely to desire connectedness (Ling & Yttri, 2002) is supported by research that indicates that 51% of teens who text message do so just to "say hello and chat," while only 34% of adults do (Lenhart, 2010). This idea may also explain why those aged 18-24 send and receive about 110 text messages a day while those 35-44 average 26 messages a day (Smith, 2011). Hall and Baym (2011) found that the more a person uses a mobile phone to contact a friend, the more he or she expects connectedness with that friend. Hall and Baym (2011) note, "Mobile phones have a logic such that when they are used in close friendships, people are steered toward increased expectations of connectedness and availability"

(p. 326). If increased mobile phone use among friends increases desire for connectedness, it seems likely that mobile phone use among family members would as well.

Research suggests, however, that parents may not be as connected as young adults. For example, parents are less likely to own and use a cell phone than their adult children (Ishii, 2006). Research conducted by the Pew Research Center in 2011 found that although 95% of those aged 18-34 owned a cell phone, the percentage dropped to around 85% for those in their late 40s and 50s (Zickuhr, 2011). Additionally, young people are the group most likely to use text messaging (Lin & Tong, 2007; Reid & Reid, 2010). Among those 18-29, 97% send text messages, while only 72% of those in their 50s and early 60s do (Pew, 2012). Furthermore, although older adults text, they may not be proficient at it (Yoon, 2003) or use it often. These findings may reflect the idea that young persons are more likely to adopt new technologies, while older persons stick with the technologies they are familiar with (van den Berg, Arentze & Timmermans, 2012).

The expectations of adult children who desire high levels of connectedness but whose parents either do not utilize mobile phones or text messaging or who do not use it often would not be met. This could then lead to dissatisfaction with communication and the relationship. This leads to the third and fourth hypotheses explored in this study:

H3: Mother's/father's reported connectedness will moderate the relationship between an adult child's desire for connectedness and communication satisfaction.

H4: Mother's/father's reported connectedness will moderate the relationship between an adult child's desire for connectedness and relationship satisfaction.

Chapter Three:

Method

Participants

Participants were recruited in several ways. First, undergraduate students in introductory communication classes at a large, Midwestern university were offered a small amount of course credit for taking the online survey. Second, in order to increase the sample of older emerging adults (23-30), undergraduate students in upper-level communication courses were offered a small amount of extra credit for recruiting someone aged 23-30 with at least one living parent to take the online survey. Also in order to increase the sample of older emerging adults, the survey link was posted on the author's Facebook page and also posted to an email listserv for the communication discipline. These attempts were somewhat successful, as 19% of the sample was recruited via the second and third methods, and 21% of the sample was 23-30 years of age.

A total of 379 subjects completed the online survey. Eight subjects were over age 30 and their data was therefore discarded due to the study's focus on young adults. Thus, the final sample was 371 subjects, 54% female. The mean age was 20.81 (*SD* = 2.93, range 18-30). The makeup of the participants was 84% Caucasian, 5% African American, 4% Hispanic, 4% Asian, and 3% "other." Regarding highest level of educational attainment, 14% had earned a high school diploma, 66% had some college education, 15% had a four-year degree, and 5% had a graduate degree.

Over 95% of the sample reported that the father who raised them was still living, and about 97% of those with a living father reported having contact with him at least once a year. More specifically participants reported communicating with their fathers with the following frequencies: 19% daily, 27% several times a week, 24% once a week, 19% several times a

month, 8% once a month, 4% several times per year, and less than 1% once a year. The mean age of the fathers was 52.06 (*SD* = 7.59, range 35-88).

Over 98% of the sample reported that the mother who raised them was still living, and 99% of those with a living mother reported having contact with her at least once a year. More specifically, participants reported communicating with their mothers with the following frequencies: 37% daily, 29% several times a week, 21% once a week, 8% several times a month, 4% once a month, and 1% several times a year. The mean age of the mothers was 50.32 (*SD* = 6.04, range 33-66).

Procedures

Individuals interested in participating in this study clicked a link to gain access to the online survey. The university's institutional review board for the protection of human subjects approved the information statement, the measures, and all of the procedures for this project (see Appendix A for the complete HSCL application). Those who clicked on the link were first presented with an information statement (see Appendix B). After consenting to participate, participants completed a series of measures (see Appendix C for the scales that were utilized in this study).

Measures

Communication repertoire size. A measure created by Schon (2012) was modified for this study by incorporating additional information communication technologies that young adults commonly utilize. The scale asked participants to indicate which of 20 technologies (with the opportunity to include two non-listed others) they use to communicate with their father and their mother. Twenty options were provided as another study about number of media used in interpersonal relationships suggested increasing the number of media examined in future studies

(Miczo et al., 2011). Sample items include, “using a walkie-talkie smartphone app” and “sending him/her a text message.” Communication repertoire size was calculated by summing each technology that was indicated as used. A paired samples *t* test was conducted to compare communication repertoire sizes between mothers and fathers. The results indicated that the mean communication repertoire size for mothers ($M = 3.50$, $SD = 1.68$) was significantly greater than the communication repertoire size for fathers ($M = 3.11$, $SD = 1.74$), $t(370) = 3.99$, $p < .01$. Thus, participants reported having more media available to contact their mothers than their fathers.

Cellular phone calls were the most popular information communication technology used to contact fathers, with 86% of the sample reporting use of this technology. Next was text and picture messaging, with 78% of the sample reporting use of this technology. Email was used by 49% of participants to contact their father. Contacting mothers was most commonly conducted via cellular phone, with 93% of the sample reporting doing so, followed by text and picture messaging (84%), and email (45%).

Participants were also asked to indicate how often they communicated with each parent using the technologies they selected. These items were rated on a scale from 1= (*less than once a month*) to 7 = (*several times a day*). A sample item is, “how often do you communicate with her by calling her cellular phone?” Participants had almost weekly contact with their fathers via cellular phone ($M = 3.84$, $SD = 1.31$) and text and picture messaging ($M = 3.79$, $SD = 1.58$) but only contact several times a month via email ($M = 3.07$, $SD = 1.29$). Participants had at least weekly contact with their mothers via cellular phone ($M = 4.55$, $SD = 1.39$) and text and picture messaging ($M = 4.72$, $SD = 1.47$) but only contact about several times a month via email ($M = 3.38$, $SD = 1.43$). There were significant differences in frequency of use with mothers and fathers for landline phone calls, $t(107) = -4.11$, $p < .001$, cellular phone calls, $t(302) = -8.50$, $p < .001$,

text and picture messaging, $t(260) = -8.28$, $p < .001$, and email, $t(112) = -2.42$, $p < .05$. Participants contacted their mother more frequently than their father for each of these media.

Participants were also asked to indicate their satisfaction with each medium. These items were rated on a scale from 1 = (*strongly disagree*) to 5 = (*strongly agree*). In communication with fathers, participants reported being satisfied with cellular phone calls ($M = 3.96$, $SD = .99$), email ($M = 3.85$, $SD = .86$), and text and picture messaging ($M = 3.82$, $SD = .98$). For mothers, participants were satisfied with cellular phone calls ($M = 4.05$, $SD = .94$), text and picture messaging ($M = 4.03$, $SD = .85$), and email ($M = 4.00$, $SD = .72$). There were significant differences in general satisfaction between mothers and fathers for landline phone, $t(107) = -2.06$, $p < .05$ and text and picture messaging, $t(260) = -2.84$, $p < .01$, with participants being more satisfied with interaction with their mother using these two technologies.

Table 1 contains percentages of use, frequency of use, and satisfaction for all communication technologies.

Desire for connectedness. A scale assessing desire for connectedness was developed based on the qualitative findings of Rettie (2003) and Licoppe (2004). The scale consists of eight items, rated on a seven-point scale from 1 = (*strongly disagree*) to 7 = (*strongly agree*). A sample item includes, "I like when those close to me call and/or text throughout the day just to reassure me they are around." The scale had a good reliability for this sample, with $\alpha = .85$. The mean participant desire for connectedness was 5.26 ($SD = 1.04$).

Reported connectedness of parent. The desire for connectedness scale was revised to assess the connectedness level of participants' mothers and fathers. Because a sense of connectedness comes from both behaviors and a high frequency of behavior (Licoppe, 2004), the anchors of the scale were changed from strongly disagree and strongly agree to 1 = (*less than*

once a month) and 5 = (*several times a day*) to allow participants to indicate how often their parents engaged in the behaviors. Selection of high numbers on the scale means the parent is acting more in line with a "connected mode" of communication. The scale consists of the eight items, but wording was changed to reflect parents' actions. A sample item includes, "My mother/father calls and/or texts just to let me know s(he) is thinking of me." The scale had an excellent reliability for fathers, with $\alpha = .96$. The scale had an excellent reliability for mothers as well, with $\alpha = .97$.

A paired samples *t* test was conducted to compare parents' reported connectedness. The results indicated that the mean father connectedness score ($M = 2.38$, $SD = .93$) was significantly lower than the mean mother connectedness score ($M = 3.06$, $SD = .94$), $t(334) = -12.84$, $p < .01$. Thus, participants reported that mothers acted more in line with connected mode than fathers.

Interpersonal communication competence. The Interpersonal Communication Competence Scale (ICCS) by Rubin and Martin (1994) was used to assess interpersonal communication competence. The ICCS consists of 30 items ranked on a scale from 1 = (*almost never*) to 5 = (*almost always*). A sample item includes, "she can accomplish her communication goals." Rubin and Martin (1994) found reliability for the scale of .86. For this study, the scale had an excellent reliability for fathers, with $\alpha = .92$, and mothers, with $\alpha = .93$. The mean communication competence for fathers was 3.73 ($SD = .53$). The mean communication competence for mothers was 3.84 ($SD = .55$). This was a significant difference, $t(334) = -3.79$, $p < .001$, indicating that participants viewed mothers as more communicatively competent than fathers.

Contact frequency. A scale used previously (Schon, 2012) was used to evaluate contact frequency. Participants were asked, "How often do you communicate with your mother/father?"

Participants answered using a seven-point scale, with 1 = (*yearly*) and 7 = (*daily*). On average, the participants contacted their fathers weekly (M = 5.18, SD = 1.38) and their mothers almost several times a week (M = 5.81, SD = 1.22). A paired-samples t test indicated this as a significant difference, $t(334) = -8.19$, $p < .01$, indicating that participants contacted their mothers more often than their fathers.

Contact duration. The item used by Jin and Pena (2010) to assess length of voice calls and text messages was adapted for this study. While romantic partners may communicate every day, research suggests that most parents and adult children communicate about once a week (Lawson et al., 1994; Taylor, Funk, Craighill, & Kennedy, 2006). Therefore, rather than asking participants to estimate how much time they spent daily communicating with romantic partners as Jin and Pena (2010) did, this study asked participants to estimate how much time they spent weekly communicating with their mother/father. Specifically, participants were instructed, "Estimate the amount of time, in minutes, that you spend communicating with your mother/father in a week." The mean duration for fathers was 194.94 minutes (SD = 301.12). The mean duration for mothers was 308.25 minutes (SD = 373.54). This was a significant difference, $t(329) = -26.76$, $p < .001$, meaning participants communicate longer with their mothers than their fathers.

Communication satisfaction. Hecht's (1978) Communication Satisfaction Inventory (CSI) was adapted to assess adult children's satisfaction with communication with their parents. The 19 items on the scale are rated from 1 = (*strongly disagree*) to 7 = (*strongly agree*). Sample items include: "I do not enjoy our typical conversations (reverse coded)" and "our typical conversations flow smoothly." In a study by Punyanunt-Carter (2007) examining father-adult daughter communication, a reliability of .94 was obtained using Hecht's (1978) CSI. In this

study, the scale had an excellent reliability for fathers, with α = .93, and for mothers, with α = .93. The mean father communication satisfaction score was 5.26 (*SD* = 1.03). The mean mother communication satisfaction was 5.44 (*SD* = .99). A paired samples *t* test was conducted to compare communication satisfaction with mothers and fathers. There was a significant difference in communication satisfaction between fathers and mothers, $t(334) = -3.03$, $p < .01$, with participants reporting greater satisfaction with mothers' communication.

Relationship satisfaction scale. A satisfaction scale created by Beatty and Dobos (1992) was used to measure adult children's satisfaction with their relationship with each parent. The scale consists of these five semantic differential items: satisfying-dissatisfying, fulfilling-disappointing, positive-negative, rewarding-punishing, and good-bad. Beatty and Dobos (1992) obtained a reliability of .92 in a study about fathers and sons. The scale by Beatty and Dobos (1992) is preferable to several others (e.g., Hendrick's 1988 Relationship Assessment Scale) because it was found to be reliable in a family context rather than a marital or romantic relationship context. Additionally, Punyanunt-Carter (2007) used Beatty and Dobos' (1992) scale in a study about father-adult daughter communication and obtained a reliability of .96. In this study, the scale had an excellent reliability for fathers, with α = .97, and for mothers, with α = .97.

A paired samples *t* test was conducted to compare relationship satisfaction with mothers and fathers. The results indicated that the mean for mother relationship satisfaction (*M* = 6.25, *SD* = 1.10) was significantly higher than the mean for father relationship satisfaction (*M* = 5.97, *SD* = 1.27), $t(334) = -86.63$, $p < .01$. Thus, participants reported greater relationship satisfaction with mothers.

Chapter Four:

Results

Two variables, mother duration and father duration, were positively skewed and therefore were transformed using square root and log transformations. Further, one variable, relationship satisfaction with mothers, was transformed using reflect and inverse because it was negatively skewed. Transformation attempts to restore homoscedasticity when variables do not have a normal distribution (Cohen, Cohen, West, & Aiken, 2002).

Correlations for all major variables are included in Table 2.

Research Question One

Research question one, which asked whether communication repertoire size is positively or negatively associated with communication and relationship satisfaction, was analyzed using Pearson's Product Moment Correlation. The correlation between father communication repertoire size and communication satisfaction was significant, $r(342) = .25$, $p < .01$. The correlation between father communication repertoire size and relationship satisfaction was also significant, $r(342) = .30$, $p < .01$. The correlation between mother communication repertoire size and communication satisfaction was significant, $r(361) = .35$, $p < .01$. The correlation between mother communication repertoire size and relationship satisfaction was also significant, $r(361) = .29$, $p < .01$.

Overall, these results suggest that a weak linear relationship exists between communication repertoire size and participants' communication and relationship satisfaction with both mothers and fathers. Thus, the results for research question one indicate that communication repertoire size is positively associated with communication and relationship satisfaction but only modestly.

Research Question Two

Research question two asked how much of the variance in communication satisfaction would be explained by communication repertoire size, above that explained by communication competence and quantity of communication. This question was analyzed using hierarchical multiple regression. Communication competence was entered first, then the quantity factors (duration and frequency), and then communication repertoire size.

Fathers. For fathers, the results of this analysis indicate that communication competence accounted for a significant amount of the communication satisfaction variability, $R^2 = .51$, $F(1,335) = 344.40$, $p < .01$, indicating that over 50% of the variance in communication satisfaction with fathers is accounted for by communication competence. A second analysis was conducted to evaluate whether communication quantity predicted communication satisfaction over and above communication competence. Communication quantity accounted for significant portion of the communication satisfaction difference after controlling for the effects of communication competence, $R^2 = .03$, $F(2,333) = 8.96$, $p < .01$. The results indicate that a small portion of the variance in communication satisfaction with fathers is associated with communication quantity. A third analysis was conducted to evaluate whether communication repertoire size predicted communication satisfaction over and above both communication quantity factors and communication competence. Communication repertoire size accounted for a nonsignificant portion of the communication satisfaction difference after controlling for the effects of communication competence and communication quantity, $R^2 = .00$, $F(1,332) = .14$, $p > .05$. Of the three variables, father communication competence most strongly related to communication satisfaction. Supporting this conclusion is the strength of the bivariate correlation between communication competence and communication satisfaction, which was .64, $p < .01$, as

well as the comparable correlation partialling out the effects of the other predictor variables, which was .64, $p < .01$.

Overall, the results indicate that communication repertoire size does not add predictor power beyond that contributed by communication competence and communication quantity factors. Thus, for fathers, the results of research question two indicate that communication repertoire size does not predict communication satisfaction after controlling for communication competence and communication quantity.

Mothers. For mothers, the results of this analysis indicate that communication competence accounted for a significant amount of the communication satisfaction variability, $R^2 = .50$, $F(1,359) = 355.25$, $p < .01$, indicating that 50% of the variance in communication satisfaction can be accounted for by its linear relationship with communication competence. A second analysis was conducted to evaluate whether communication quantity predicted communication satisfaction over and above communication competence. Communication quantity accounted for a significant portion of the communication satisfaction difference after controlling for the effects of communication competence, $R^2 = .04$, $F(2,357) = 13.34$, $p < .01$. The results indicate that a small portion of the variance in communication satisfaction with mothers is associated with communication quantity. A third analysis was conducted to evaluate whether communication repertoire size predicted communication satisfaction over and above both communication quantity factors and communication competence. Communication repertoire size accounted for small but significant portion of the communication satisfaction difference after controlling for the effects of communication competence and communication quantity, $R^2 = .01$, $F(1,356) = 10.05$, $p < .01$. The results indicate that communication repertoire size does add prediction power beyond that contributed by communication competence and

communication quantity factors but only by a small amount. Among all the variables, mother communication competence was most strongly associated with communication satisfaction. Supporting this conclusion is the strength of the bivariate correlation between communication competence and communication satisfaction, which was .62, $p < .01$, as well as the comparable correlation partialling out the effects of the other predictor variables, which was .65, $p < .01$.

In sum, the results for research question two indicate that communication repertoire size does influence communication satisfaction with mothers when controlling for quality and quantity factors, but it does not influence communication satisfaction as much as communication competence does.

Research Question Three

Research question three asked how much of the variance in relationship satisfaction would be explained by communication repertoire size, above that explained by communication competence and quantity of communication. This was analyzed using hierarchical multiple regression. Communication competence was entered first, then the quantity factors (duration and frequency), and then communication repertoire size.

Fathers. For fathers, the results of this analysis indicate that communication competence accounted for a significant amount of the relationship satisfaction variability, $R^2 = .41$, $F(1,335) = 229.39$, $p < .01$, indicating that 41% of the variance in relationship satisfaction can be accounted for by its linear relationship with communication competence. A second analysis was conducted to evaluate whether communication quantity predicted relationship satisfaction over and above communication competence. Communication quantity accounted for significant portion of the relationship satisfaction difference after controlling for the effects of communication competence, $R^2 = .06$, $F(2,333) = 17.87$, $p < .01$. The results indicate that a small

portion of the variance in relationship satisfaction with fathers is associated with communication quantity. A third analysis was conducted to evaluate whether communication repertoire size predicted relationship satisfaction over and above both communication quantity factors and communication competence. Communication repertoire size accounted for a nonsignificant portion of the relationship satisfaction difference after controlling for the effects of communication competence and communication quantity, $R^2 = .00$, $F(1,332) = 2.66$, $p > .05$. The results indicate that communication repertoire size does not add predictor power beyond that contributed by communication competence and communication quantity factors. Of the three variables, father communication competence most strongly related to relationship satisfaction. Supporting this conclusion is the strength of the bivariate correlation between communication competence and relationship satisfaction, which was .51, $p < .01$, as well as the comparable correlation partialling out the effects of the other predictor variables (i.e., communication quantity and communication repertoire size) which was .53, $p < .01$.

Overall, these results for research question three suggest that communication repertoire size does not influence relationship satisfaction with fathers after controlling for quality and quantity factors.

Mothers. For mothers, the results of this analysis indicate that communication competence accounted for a significant amount of the relationship satisfaction variability, $R^2 = .27$, $F(1,359) = 133.78$, $p < .01$, indicating that 27% of the variance in relationship satisfaction with mothers can be accounted for by its linear relationship with communication competence. A second analysis was conducted to evaluate whether communication quantity predicted relationship satisfaction over and above communication competence. Communication quantity accounted for a significant portion of the relationship satisfaction difference after controlling for

the effects of communication competence, R^2 change = .07, $F(2,357) = 19.26$, $p < .01$. The results indicate that a small portion of the variance in relationship satisfaction with mothers is associated with communication quantity. A third analysis was conducted to evaluate whether communication repertoire size predicted relationship satisfaction over and above both communication quantity factors and communication competence. Communication repertoire size accounted for a nonsignificant portion of the relationship satisfaction difference after controlling for the effects of communication competence and communication quantity, $R^2 = .01$, $F(1,356) = 3.05$, $p > .05$. The results indicate that communication repertoire size does not add prediction power beyond that contributed by communication competence and communication quantity factors. Of the three variables, mother communication competence most strongly related to relationship satisfaction. Supporting this conclusion is the strength of the bivariate correlation between communication competence and relationship satisfaction, which was .42, $p < .01$, as well as the comparable correlation partialling out the effects of the other predictor variables, which was .44, $p < .01$.

In sum, the results of research question three indicate that communication repertoire size does not influence relationship satisfaction with mothers after controlling for quality and quantity factors.

Hypothesis One

Hypothesis one posited that mother/father communication competence would moderate the relationship between communication repertoire size and communication satisfaction. This was analyzed using moderated multiple regression (Aiken & West, 1991). Communication repertoire size (centered) was entered first, then communication competence (centered), and then the product of both centered variables.

Fathers. In the first analysis run, fathers' communication repertoire size accounted for a significant amount of communication satisfaction variability, $R^2 = .06$, $F(1,340) = 23.00$, $p < .01$, indicating that fathers' communication repertoire size does weakly influence communication satisfaction. The second analysis conducted, which evaluated whether father communication competence predicted communication satisfaction over and above father communication repertoire size, was also significant with R^2 change = .46, $F(1,339) = 332.47$, $p < .01$, indicating that 46% of the variance in communication satisfaction can be accounted for by its linear relationship with communication competence.

In the third step, the interaction was examined. The analysis indicates that the interaction between communication repertoire size and communication competence is a nonsignificant factor in communication satisfaction, with R^2 change = .00, $F(1,338) = 1.58$, $p > .05$. This indicates that the interaction of communication repertoire size and communication competence is not a significant predictor of communication satisfaction, disconfirming hypothesis one for fathers. Father communication competence most strongly related to communication satisfaction, as the strength of the bivariate correlation between father communication competence and communication satisfaction was .72, $p < .01$, and the comparable correlation partialling out the effects of the other predictor variables was .70, $p < .01$.

Overall, the results indicate that father communication repertoire size and father communication competence are associated with communication satisfaction, although the interaction between the two is not.

Mothers. For mothers, the regression analysis revealed a significant main effect for communication repertoire size, $R^2 = .12$, $F(1,359) = 49.63$, $p < .01$, and for communication competence above communication repertoire size , R^2 change = .40, $F(1,358) = 303.30$, $p < .01$,

indicating that 40% of the variance in communication satisfaction can be accounted for by its linear relationship with communication competence. Additionally, the interaction between communication repertoire size and communication competence was a significant factor in communication satisfaction with mothers, with R^2 change = .02, $F(1,357) = 17.99$, $p < .01$. This provides support for hypothesis one for mothers, although the influence is modest. The interaction was further examined using simple slope analysis as described by Aiken and West (1991) and the interaction was plotted by high and low mother communication competence ratings (1 SD above and below the mean) to look at differences between mother communication satisfaction as a function of communication competence and mother communication repertoire size. The simple slope analyses revealed that communication repertoire size does increase communication satisfaction when mother communication competence was low, $\beta = .20$, $p < .01$ but not when it was high, $\beta = .01$, $p > .05$.

In sum, communication competence did moderate the relationship between communication repertoire size and communication satisfaction with mothers. Thus, hypothesis one for mothers was supported. A graph of these findings is provided in Figure 1.

Hypothesis Two

Hypothesis two predicted that communication competence would moderate the relationship between communication repertoire size and relationship satisfaction. This was analyzed using moderated multiple regression (Aiken & West, 1991). Communication repertoire size (centered) was entered first, then communication competence (centered), and then the product of both centered variables.

Fathers. The analyses indicated a significant main effect for communication repertoire size, $R^2 = .09$, $F(1,340) = 33.26$, $p < .01$, and for communication competence above

communication repertoire size , R^2 change = .36, $F(1,339) = 220.90$, $p < .001$, indicating that 36% of the variance in relationship satisfaction can be accounted for by its linear relationship with communication competence.

Supporting hypothesis two for fathers, the results of the third analysis indicate that the interaction between communication repertoire size and communication competence was a significant but modest factor in relationship satisfaction, with R^2 change = .01, $F(1,338) = 5.91$, $p < .05$. The interaction was further examined using simple slope analysis as described by Aiken and West (1991) and the interaction was plotted by high and low father communication competence ratings (1 SD above and below the mean) to look at differences between father relationship satisfaction as a function of communication competence and father communication repertoire size. The simple slope analyses revealed that communication repertoire size was positively associated with relationship satisfaction when father communication competence was low, $\beta = .19$, $p < .01$ but not when it was high, $\beta = .02$, $p > .05$.

Therefore, communication competence did moderate the relationship between communication repertoire size and relationship satisfaction with fathers. A graph of these findings is provided in Figure 2.

Mothers. For mothers, the regression analysis revealed a significant main effect for communication repertoire size, $R^2 = .08$, $F(1,359) = 32.53$, $p < .001$, and for communication competence above communication repertoire size , R^2 change = .21, $F(1,358) = 107.62$, $p < .001$, indicating that 21% of the variance in relationship satisfaction can be accounted for by its linear relationship with communication competence. Supporting hypothesis two for mothers, the results of the third analysis indicate that the interaction between communication repertoire size and communication competence was a significant but modest factor in relationship satisfaction with

mothers, with R^2 change = .03, $F(1,357) = 17.19$ $p < .001$. The interaction was further examined using simple slope analysis as described by Aiken and West (1991) and the interaction was plotted by high and low mother communication competence ratings (1 SD above and below the mean) to look at differences between mother relationship satisfaction as a function of communication competence and mother communication repertoire size. The simple slope analyses revealed that communication repertoire size was positively associated with relationship satisfaction when mother communication competence was low, $\beta = .00024$, $p < .001$ but not when it was high, $\beta = -.000012$, $p > .05$.

Overall, communication competence did moderate the relationship between communication repertoire size and relationship satisfaction with mothers. A graph of these findings is provided in Figure 3. Note the slope and figure are scaled differently than the other aforementioned analyses due to the earlier transformation of the mother relationship satisfaction variable.

Hypothesis Three

Hypothesis three, that mother/father reported connectedness would moderate the relationship between adult child desire for connectedness and communication satisfaction, was tested using moderated multiple regression (Aiken & West, 1991). Participant desire for connectedness (centered) was entered first, then father/mother reported connectedness (centered) was entered, and finally a product term of both centered variables was entered.

Fathers. The results of this analysis indicate main effects for participant desire for connectedness, $R^2 = .07$, $F(1,340) = 25.42$, $p < .01$, and father reported connectedness over and above participant desire for connectedness, R^2 change = .11, $F(1,339) = 44.44$, $p < .01$. Thus, 7% of the communication satisfaction variance was accounted for by its linear relationship with

participant desire for connectedness while adding father reported connectedness to the model accounted for an additional 11% of the variance in communication satisfaction. Thus, participant desire for connectedness and father reported connectedness account for a small portion of the variance in communication satisfaction.

The interaction of participant desire for connectedness and father reported connectedness was also significant after controlling for the effects of participant desire for connectedness and father reported connectedness, with R^2 change = .02, $F(1,338) = 8.45$, $p < .01$, indicating the interaction accounted for a modest amount of variance above that predicted by the first two factors. This interaction was further examined using simple slope analysis as described by Aiken and West (1991), and the interaction was plotted by high and low ratings for father reported connectedness (1 SD above and below the mean) to look at differences between father communication satisfaction as a function of participant desire for connectedness and father reported connectedness. The simple slope analyses revealed an effect when father reported connectedness was high, $\beta = .33$, $p < .01$ but not when it was low, $\beta = .06$, $p > .05$. A graph of these findings is provided in Figure 3. These results suggest that a mismatch in participant desire for connectedness and father reported connectedness can reduce communication satisfaction when fathers' reported connectedness is high but that a match between a high desire for connectedness and high levels of reported connectedness promotes communication satisfaction.

Overall, father reported connectedness did moderate the relationship between participant desire for connectedness and communication satisfaction with fathers. Thus, hypothesis three was supported for fathers. A graph of these findings is provided in Figure 4.

Mothers. The results of this analysis indicate that participant desire for connectedness accounted for a significant amount of the communication satisfaction variability, $R^2 = .11$,

$F(1,359) = 43.55$, $p < .01$, indicating that 11% of the variance in communication satisfaction with mothers is accounted for by its linear relationship with participant desired level of connectedness. A second analysis was conducted to evaluate whether mother reported connectedness predicted communication satisfaction over and above participant desire for connectedness. Mother reported connectedness accounted for significant portion of the communication satisfaction difference after controlling for the effects of participant desire for connectedness, R^2 change = .07, $F(1,358) = 28.49$, $p < .01$. The results indicate that mother reported connectedness does influence communication satisfaction, although only modestly. A third analysis was conducted to evaluate whether the interaction of participant desire for connectedness and mother reported connectedness predicted communication satisfaction over and above both participant desire for connectedness and mother reported connectedness. The interaction was nonsignificant, R^2 change = .01, $F(1,357) = 2.43$, $p > .05$. Mother reported connectedness most strongly related to communication satisfaction, as the correlation between mother reported connectedness and communication satisfaction was .28, $p < .01$, and the comparable correlation partialling out the effects of the other predictor variables was .27, $p < .01$.

In sum, the results indicate that the interaction does not offer predictor power beyond that contributed by the main effects, disconfirming hypothesis three for mothers.

Hypothesis Four

Hypothesis four posited that mother's/father's reported connectedness would moderate the relationship between an adult child's desire for connectedness and relationship satisfaction. This was analyzed using moderated multiple regression (Aiken & West, 1991). Participant desire for connectedness (centered) was entered first, then father/mother reported connectedness (centered) was entered, and finally a product term of both centered variables was entered.

Fathers. The results of this analysis indicate that participant desire for connectedness accounted for a significant amount of relationship satisfaction variability, $R^2 = .02$, $F(1,340) = 6.18$, $p < .05$, indicating that participants' desired level of connectedness does relate to relationship satisfaction with fathers, although only modestly. A second analysis was conducted to evaluate whether father reported connectedness predicted relationship satisfaction over and above participant desire for connectedness. Father reported connectedness accounted for significant portion of the relationship satisfaction difference after controlling for the effects of participant desire for connectedness, R^2 change = .19, $F(1,339) = 81.38$, $p < .01$. The results indicate that father reported connectedness accounts for an additional 19% of the variance in relationship satisfaction beyond that accounted for by participant desire for connectedness. A third analysis was conducted to evaluate whether the interaction of participant desire for connectedness and father reported connectedness predicted relationship satisfaction over and above the other two factors. The interaction accounted for a nonsignificant portion of the relationship satisfaction difference after controlling for the effects of participant desire for connectedness and father reported connectedness, R^2 change = .00, $F(1,338) = .43$, $p > .05$, thus disconfirming hypothesis four for fathers. Father reported connectedness most strongly related to relationship satisfaction. Supporting this conclusion is the strength of the bivariate correlation between father reported connectedness and relationship satisfaction, which was .45, $p < .01$, as well as the comparable correlation partialling out the effects of the other predictor variables, which was .44, $p < .01$.

Overall, the results indicate that participant desire for connectedness and father reported connectedness are associated with relationship satisfaction, although the interaction between the two is not.

Mothers. The results of this analysis indicate that participant desire for connectedness accounted for a significant amount of relationship satisfaction variability, $R^2 = .05$, $F(1,359) = 17.16$, $p < .01$, indicating that participants' desired level of connectedness does modestly relate to relationship satisfaction. A second analysis was conducted to evaluate whether mother reported connectedness predicted relationship satisfaction over and above participant desire for connectedness. Mother reported connectedness accounted for significant portion of the relationship satisfaction difference after controlling for the effects of participant desire for connectedness, R^2 change = .13, $F(1,358) = 58.25$, $p < .01$. The results indicate that mother reported connectedness accounts for 13% of additional variance in relationship satisfaction above that offered by participant desire for connectedness. A third analysis was conducted to evaluate whether the interaction of participant desire for connectedness and mother reported connectedness predicted relationship satisfaction over and above both participant desire for connectedness and mother reported connectedness. The interaction was nonsignificant, with, R^2 change = .00, $F(1,357) = .43$, $p > .05$, thus disconfirming hypothesis four for mothers. Mother reported connectedness was most strongly related to relationship satisfaction, as the strength of the bivariate correlation between mother reported connectedness and relationship satisfaction was .39, $p < .01$, and the comparable correlation partialling out the effects of the other predictor variables, which was .37, $p < .01$.

In sum, the results indicate that participant desire for connectedness and mother reported connectedness are associated with relationship satisfaction, although the interaction between the two is not.

Chapter Five:

Discussion

Overview of Findings

This study examined how access to and use of information communication technologies influence communication and relationships between young adults and their parents. This section examines the findings of this study in relation to existing literature, discusses the theoretical contributions of this work, notes limitations of this research, and highlights the implications of this study's results.

The first research question asked whether communication repertoire size was negatively or positively associated with communication and relationship satisfaction. The second and third research questions then examined whether communication repertoire size was still influential on communication and relationship satisfaction when other communication variables (quality and quantity) were examined that have been found to be strong predictors in past research (e.g., Emmers-Sommer, 2004).

Communication repertoire size had a positive yet weak relationship with communication and relationship satisfaction for both mothers and fathers. Therefore, this study adds to other research (Hall & Baym 2011; Jin & Pena, 2010; Miller-Ott et al., 2012) that indicates information communication technologies play a role in modern relationships. However, this is one of the first studies to quantitatively examine how technology use influences satisfaction in family relationships.

The results of research question two and three suggest the importance of communication repertoire size compared to communication quality (operationalized as communication competence in this study) and communication quality (i.e., frequency and duration) is negligible.

Communication repertoire size did not significantly predict relationships satisfaction over communication quality and quantity for fathers and mothers or communication satisfaction for fathers. Communication repertoire size did significantly predict communication satisfaction with mothers above and beyond communication quality and quantity factors, but the additional variance it explained was only 1%. These divergent findings between mothers and fathers may be explained by research that suggests that women use information communication technologies to express affection (Mansson & Myers, 2011; Wei & Lo, 2006), while men use them more for information seeking. It may be the additional affection received that leads to significant increases in communication satisfaction, and information seeking and receiving may not have the same influence on communication satisfaction.

In looking at the overall regression analyses, communication competence was the variable that explained the greatest amount of variance for the satisfaction variables, which ranged from 27% to 51%. Quantity factors were significant in all four analyses and accounted for an additional 3% to 7% of the variance in the satisfaction variables above and beyond that of communication quality. This aligns with other research that indicates quantity factors are related to relational outcomes, including satisfaction, love, and commitment (Jin & Pena, 2010; Kline & Stafford, 2004; Punyanunt-Carter, 2008). Overall, the main effect results are similar to ones found in other studies, as Emmers-Sommer (2004) found that communication quality factors explained more of the variance in relationship satisfaction than quantity factors in a study of friendship and romantic relationships.

Hypotheses one and two predicted that mother/father communication competence would moderate the relationship between communication repertoire size and communication/relationship satisfaction. It is important to note first that communication

repertoire size did have a significant main effect on communication and relationship satisfaction in all four analyses, explaining between 6-12% of the variance. A greater amount of variance (21-46%) in all four analyses was explained by communication competence, which reinforces both this study's earlier findings and other studies' findings regarding the importance of communication competence for satisfaction (Arroyo & Segrin, 2011; Emmers-Sommer, 2004). As for the interaction, communication competence was not a significant moderator of the influence of communication repertoire size on communication satisfaction with fathers, but it was significant for communication satisfaction with mothers and relationship satisfaction for both mothers and fathers. The amount of variance explained by the interaction was modest (between 1-3%). For all three of the significant interactions, the simple slope analyses suggested that changes in communication repertoire size do not matter when communication competence is high, but communication repertoire size is influential when communication competence is low, with the addition of media increasing satisfaction.

Hypotheses three and four predicted that mother/father reported connectedness would moderate the relationship between adult child desire for connectedness and communication/relationship satisfaction. It is important to note first that adult child desire for connectedness did have a significant main effect on the satisfaction variables, accounting for more of the variance in communication satisfaction (7-11%) than relationship satisfaction (2-5%). Father reported connectedness did significantly moderate the relationship between participant desire for connectedness and communication satisfaction, with the interaction explaining 2% of the variance above and beyond the other two predictors. Examining the simple slopes revealed that participant desire for connectedness has little influence on communication satisfaction when father reported connectedness is low but that it is influential when father

reported connectedness is high, with communication satisfaction increasing as a participant's desire for connectedness increases. In the remaining three analyses, parent reported connectedness did not moderate the relationship between participant desire for connectedness and communication and relationship satisfaction.

In looking at the overall regression analysis, parent reported connectedness accounted for the greatest amount of variance (11-19%) for communication satisfaction with fathers and relationship satisfaction with both fathers and mothers. Participant desire for connectedness also had a significant effect, which aligns with other research (e.g., Hall & Baym, 2011) that indicates individuals' expectations regarding how technology should be utilized influence relationship satisfaction. However, participant desire for connectedness had less of an influence on the satisfaction variables than parent reported connectedness, perhaps because this sample of participants had a fairly high desire for connectedness (M = 5.26). However, for communication satisfaction with mothers, participant desire for connectedness accounted for the greatest amount of variance explained (11%). This finding may be explained by research that shows mothers have more frequent interactions with their children than do fathers (Lye, 1996; Taylor et al., 2006) and that women call family members more frequently than do males (Wei & Lo, 2006). Therefore, mothers seem more likely to be perceived as communicating in ways akin to connected mode so participants' desire for connectedness thus becomes more predictive. This idea was supported by this study, which found that mother reported connectedness was significantly higher than father reported connectedness.

Now that the specific findings related to the research questions and hypotheses of this study have been discussed, the broader findings will be examined. First, this research provides additional support for previous studies' finding that multiple media are used to maintain

relationships (Baym et al., 2004; Kim et al., 2007). When presented with 22 information communication technologies, over 73% of participants who had a relationship with their mother reported utilizing at least three channels, while 68% of participants who had a relationship with their father reported utilizing at least three channels. This is in line with Haythornthwaite's (2000) examination of communication between students in a particular college course. Haythornthwaite (2000) noted that those with strong ties reported communicating via two to four channels while those who were less close communicated via one or two channels. Similarly, those working on an academic research team generally used only two of six available media (Haythornthwaite & Wellman, 1998), users of a music-based social networking website generally utilized two of the nine channels measured in the study (Baym & Ledbetter, 2009), and grade school children in Belgium who were good friends reported using four of six measured channels (Van Cleemput, 2010).

These findings suggest that even close individuals, who use more channels than those who are less close (Haythornthwaite, 2005), may only utilize a relatively small number of all of the available channels. It seemed possible that previous research was not obtaining an accurate number of channels used to maintain ties because it only surveyed use of a restricted number of channels (e.g., Baym et al., 2004; Miczo et al., 2011). However, this study suggests that dyads do only use a small number of channels to regularly interact.

Several different ideas may explain why the parent-adult child dyads only utilized a relatively small number of the channels available to them. Ledbetter and Kuznekoff (2012) suggest the law of diminishing returns may be at play with regard to number of channels used among strong ties. Haythornthwaite (2005) also noted that strong ties can better resist use of a new media if it does not suit their needs because of the other options available. In addition, these

findings may be explained by work done using media niche theory (Dimmick, Kline, & Stafford, 2000). Media niche theory posits that older technologies either compete with newer technologies if they fulfill the same need or they complement newer technologies because the older and newer technologies fill different needs, or fall into different niches (Dimmick et al., 2000). Ledbetter's (2009) research suggests, for example, that postal mail and email both fulfill the need of private, asynchronous communication while telephone and face-to-face interactions fulfill the need for synchronous oral communication. Research by Dainton and Aylor (2002) suggests that telephone and face-to-face complement each other, perhaps because one is used when parties are not together while the other can only be used when the parties are together. On the other hand, use of the internet may displace use of the phone, as Dainton and Aylor (2002) found a negative correlation of .23 between the two among individuals in long-distance romantic relationships. Similarly, recent research by Ramirez et al. (2008) found overlap in use of IM and email, suggesting they fulfill similar needs or desires. Thus, if a parent-adult child dyad uses IM, it may not use email or vice versa, which may explain why only a limited number of the surveyed channels were actually reported as being utilized by participants.

Theoretical Contributions

In addition to the above findings, the results of this study support Haythornthwaite's (2005) media multiplexity theory (MMT). The number of channels used in a relationship was positively associated with communication and relationship satisfaction. Although similar findings between tie strength and channels used have been found in other contexts, such as friendships (Haythornthwaite & Wellman, 1998; Igarashi et al., 2005; Van Cleemput, 2010), this is one of the first studies to extend this finding to family relationships.

Korzenny's (1978) theory of electronic propinquity (TEP) received mixed results in this study. Fewer channels were not associated with more communication and relationship satisfaction. However, TEP's propositions may still be valid. It may be that, as Walther and Bazarova (2008) suggest, it is interaction among the variables in the theory that produce this effect. Indeed, in studies where TEP has been supported (e.g., Walther & Bazarova, 2008) interactions have been examined. In this study, TEP was supported when the interaction of communication skill (i.e., communication competence) and communication repertoire size was examined. The interaction between communication repertoire size and communication competence was significant for both communication and relationship satisfaction with mothers and relationship satisfaction with fathers. The patterns of results were similar in all three cases: a greater number of channels by which to interact somewhat negated the influence of low communication competence on satisfaction. These finding suggests that at least some of TEP's propositions apply to interpersonal settings as well as the group and organization settings it has largely been tested in.

This study also adds to the nascent literature on the use of information communication technologies to maintain connectedness. The study implies that, at least for young adults, greater connectedness by parents leads to greater satisfaction with communication and the relationship. In fact, parent reported connectedness explained the greatest amount of variance in satisfaction in three of the four analyses in which it was examined, with it contributing to 11% of the variance in communication satisfaction with fathers, 19% of the variance in relationship satisfaction with fathers, and 13% of the variance in relationship satisfaction with mothers. This is one of the first studies to look at how connectedness influences families using quantitative methods, other

research has been conducted qualitatively (Licoppe, 2004; Rettie, 2003) or has focused on peer friendships (Hall & Baym, 2011).

Limitations and Future Directions

Although this study has improved on prior studies by expanding the number of media surveyed, as suggested by Miczo et al. (2011), it does have several limitations. First, communication frequency, duration, and parent reported connectedness were measured based on self-reports. Participants may therefore have inaccurately recalled or estimated these variables. At best, this data provides a generalized idea of what parent-young adult communication looks like. Conducting a diary study would provide a more accurate assessment of these variables.

In addition, these results were obtained from cross-sectional data. Therefore, the data only show the participants' perceptions of their relationship at a given point in time. Furthermore, causation cannot be determined. Future studies could use modeling techniques to establish the direction of the relationships between variables. Experiments that manipulate the communication repertoire size for a period of time could also provide insight.

Another limitation is that the participants of this study largely consisted of white Americans. This limits the generalizability to other populations, especially because technology access differs in other countries (Ishii, 2006) and minority members typically have more frequent communication with their parents than do Caucasians (Taylor et al., 2006). However, strengths of this study include a good balance of male and female participants and the recruitment of a reasonable number of older young adults.

Finally, this study only collected data from the perspective of the young adult children. Future studies should consider the relationships among the same variables based on the perspective of the parent. It is likely the effect sizes would be different, as older adults are less

likely to desire connectedness (Ling & Yttri, 2002) and are less likely than young people to utilize new technologies (Ishii, 2006; Reid & Reid, 2010; van den Berg et al., 2012) so it may not matter if their sons and daughters use Snapchat, Skype, or a walkie-talkie smartphone app.

Implications

Despite these limitations, this research has several important implications. First, this study suggests that parents desiring to improve their relationships with their young adult children should consider calling or texting their children more frequently but with the intent of making contact rather than for information exchange or other purposes. Trying to find additional media agreeable to both parties that can be utilized for communication would also be advantageous.

Educators and family therapists can utilize this research as well. This study underscores the importance of parents' communication competence on adult children's communication and relationship satisfaction. Fortunately, communication competence is a skill that can be learned or honed (Rubin & Martin, 1994). Therefore, educators should integrate instruction that develops communication skills into their lesson plans so future parents are better equipped with these skills.

In addition, family therapists can attempt to alter poor relationships by trying to enhance the communication skills of those in the relationship. They can also encourage parents in poor relationships with their adult children to communicate with them through the "connected mode" means of frequent contact and contact for contact's sake, rather than for instrumental purposes. However, should such attempts fail, this research then suggests that finding additional media that both parties are willing to utilize may help. Playing electronic games with each other, such as DrawSomething or Words With Friends, may work well for parent-adult child dyads, as this

study found a significant, positive correlation between participant desire for connectedness and liking to play the two games, $r = .32$, $p < .01$.

Finally, this study helps researchers by finding that MMT applies to families. This research also suggests that number of media used may coalesce around a relatively small number, a finding that researchers should attempt to replicate in future studies. Additionally, this study suggests that TEP's propositions may only be accurate when interactions among the related variables are tested. Lastly, this study adds to the literature on "connected mode" by finding that it applies to older young adults in addition to young adults and that communicating using a "connected mode" style is desirable with family members as well as friends.

Conclusion

Examinations of how information communication technologies influence families in the middle years have been sparse. This study attempted to fill this gap by examining differences in parents' and adult children's use of technologies and at how much access to a wide variety of information communication technologies influences both communication and relationship satisfaction. This study supported MMT by finding that the number of media parents and adult children utilize to maintain their relationship does modestly influence satisfaction and it also added to the literature on connectedness by suggesting that differences in how parents and adult children utilize information communication technologies can influence satisfaction. These findings have provided families, educators, therapists, and researchers a better understanding of how information communication technologies influence interpersonal communication and close relationships.

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Appendix A: HSCL Application

UNIVERSITY OF KANSAS
Human Subjects Committee Lawrence
Application for Project Approval

1. Name of Investigator(s) Jennifer Schon
2. Department Affiliation Department of Communication Studies
3. Campus or Home Mailing Address: Communication Studies 1440 Jayhawk Blvd., Room 102 Lawrence, KS 66045-7574
   a. Email address:jaschon@ku.edu
   Phone Number(s): (a) Campus:785-864-3633 (b) Home
5. Name of Faculty Member Responsible for Project: Dr. Adrianne Kunkel
HSCL must receive faculty approval via email notification or hard copy signature before a student application may be processed.
   a. Email address of Faculty Member: adkunkel@ku.edu
6. Type of investigator and nature of activity. (Check appropriate categories)
   ☐ Faculty or staff of University of Kansas
   ☐ Project to be submitted for extramural funding; Agency:_____
   KU/KUCR project number:_____
(HSCL must compare all protocols in grant applications with the protocols in the corresponding HSCL application)
   ☐ Project to be submitted for intramural funding; Source: _____
   ☐ Project unfunded
   ☐ Other: _____
   ☒ Student at University of Kansas: ☒ Graduate ☐ Undergraduate ☐ Special
   ☐ Class project (number & title of class): _____
   ☐ Independent study (name of faculty supervisor): _____
   ☐ Other (please explain): _____
   ☐ Investigators not from the Lawrence campus but using subjects obtained through the University of Kansas
   ☐ Activity to be registered with clinical trials.gov (when registered, notify HSCL of registration number)

7.a. Title of investigation: Is More Better? Examining How Parents' Access to Communication Technologies Influences Satisfaction Among Adult Children

7.b. Title of sponsored project, if different from above: _____

8. Individuals other than faculty, staff, or students at Kansas University.
   Please identify investigators and research group:

_____

9. Certifications: By submitting this application via email or hard copy I am certifying that I have read, understand, and will comply with the policies and procedures of the University of Kansas regarding human subjects in research. I subscribe to the standards and will adhere to the policies and procedures of the HSCL, and I am familiar with the published guidelines for the

ethical treatment of subjects associated with my particular field of study. I also certify that I have verified and disclosed any potential conflict of interest between myself and/or my team members and the project sponsor (if applicable). **Type or write name(s) in the signature lines below depending on your electronic or hard copy submission.**

Date: February 7, 2013
Signature: Jennifer Schon
First Investigator

Date: February 7, 2013
Signature: Dr. Adrianne Kunkel
Faculty Supervisor

Signature:
Second Investigator

Signature:
Third Investigator

First Investigator: Jennifer Schon

Project Title: Is More Better? Examining How Parents' Access to Communication Technologies Influences Satisfaction Among Adult Children

10. Please answer "Yes" or "No" for the following questions about the proposed research activity. (Provide details about questions checked "Yes" on the last page of the application.)

Does the research involve:

_no_ a. drugs or other controlled substances?

_no_ b. payment of subjects for participation?

_no_ c. access to subjects through a cooperating institution (other than KU)?

_no_ d. substances taken internally by or applied externally to the subjects?

_no_ e. mechanical or electrical devices (e.g., electrodes) applied to the subjects?

_no_ f. collection of fluids (e.g., blood, urine, etc.) or tissues from subjects or exposure of subjects to hazardous materials (chemical, biological, radiation, etc.)?
Environment Health & Safety (EHS) Approval number (required):

_no_ g. subjects experiencing stress (physiological or psychological)?

_no_ h. omission of information concerning any aspect of purposes or procedures (misleading or withheld information)?

_no_ i. deception of subjects (active misinformation or false feedback provided)?

_no_ j. subjects who could be judged to have limited freedom of consent (e.g., minors, developmentally delayed persons, or those institutionalized)?

_no_ k. any procedure or activities that might place the subjects at risk (psychological, physical, or social)?

yes l. use of ☐ participant observation ☐interviews, ☐focus groups, ☒questionnaires, ☐audio or ☐video recordings? (check all that apply)

_no_ m. data collection over a period greater than one year?

yes n. indicate the consent procedure(s) to be used ☐signed, ☐oral, ☒information statement, ☐ parent/guardian, ☐ assent procedure for minors or the cognitively impaired (Check all that apply) Note: HSCL makes the final determination on waiver of a signed consent form or consent. Justification must be provided for waiver of signed consent form or consent.

_no_ o. indicate the type of data you will be acquiring in this project ☐ private health information, ☐ academic records, ☐ social security information, ☐ KU ID number

_no_ p. other data that may increase participant risk (46.101 (b) (2) (ii) in the areas listed ☐ criminal ☐ civil, ☐ financial, ☐ employment, ☐ reputation

11. If any of the key personnel or research team members of this project have a financial interest* in a project sponsor or a provider of goods or services to the project, the individual and the relationship must be disclosed.

☒ Neither I nor any member of the research team has a financial interest in the project sponsor or a provider of goods or services to this project.

☐ I am disclosing the following financial interest(s)** :

Name of Individual	Role on Project	Financial Interest Entity

* An individual's financial interests include those of the individual, his or her spouse, dependent children, and other members of the personal household (i.e., ownership, compensation received or anticipated, a position of officer or director, or receipt of fees or commissions).

** If this financial interest has not already been disclosed on a Conflict of Interest report, an ad hoc disclosure via the Conflict of Interest reporting form may also be required. Direct inquiries to coi@ku.edu. COI resource information is also available at the following link: http://www.rcr.ku.edu/coi/index.shtml

Additional COI Notes:

Complete the following questions on this page. Please do not use continuation sheets.

12. Approximate number of subjects to be involved in the research: 250

13. Project Purpose(s):

To examine differences between parents' and adult children's use of communication technologies and fathers' and mothers' use of communication technologies.

14. Describe the proposed subjects (age, sex, race, or other special characteristics). If there is a physical or mental health condition that characterizes the subjects to be included in the study, please indicate this here as well.

Subjects will include men and women aged 18-30 with at least one living parent. Attempts will be made to recruit participants from a variety of backgrounds.

15. Describe how the subjects are to be selected. Please indicate how you will gain access to, and recruit these subjects for participation in the project. That is, will you recruit participants through word-of-mouth, fliers or poster, newspaper ads, public or private membership or employee lists, etc. Drawings/raffles are not permitted for payment or recruiting. (If subjects are to be recruited from a cooperating institution, such as a clinic or other service organization be aware that subjects' names and other private information, such as medical diagnosis, may not be obtained without the subjects' written permission.)

Subjects will be recruited through students in undergraduate communication classes. These students will be asked to provide the email address of someone who fits the study criteria. These individuals will then receive an email asking them to participate in the study. Prior to participation, participations will fill out an Information Statement (see Appendix A).

16. Single page abstract of the proposed procedures in the project – consent to the post-project security measures. (The abstract should be a succinct overview of the project without jargon, unexplained abbreviations, or technical terminology. Here is where you must provide details about Yes answers to items under question 10.a through 10.p of the application: drugs, cooperating institutions, medical information requested, security measures and post-project plans for tapes, questionnaires, surveys, and other data, and detailed debriefing procedures for deception projects.)

Advancements in technology have altered how and when communication occurs between people in a relationship. Although research has investigated how new communication technologies affect peer relationships and parents' communication with their young children, how such technology influences parent-adult child relationships is less clear. Some research suggests that fathers use fewer new technologies than mothers do (e.g., Schon, 2012). Using social exchange theory (Thibaut & Kelley, 1959), this study examines whether communication technology access influences communication and relationship satisfaction and to what extent. This study also examines a new use of communication technologies – connectedness – and analyzes how desire for connectedness influences parent-adult child relationships.

A database linking students' names to the names and email addresses of the participants they recruited will be kept only long enough to ensure students receive the course credit or extra credit for which they qualify. This time should not exceed three months. The data will be kept in a password protected database file on a computer which requires a password for access.

Data from the survey (see Appendix B) will be kept on the author's Hawk drive or personal PC, both of which are password protected.

Appendix B: Information Statement

The Department of Communication Studies at the University of Kansas supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You should be aware that even if you agree to participate, you are free to withdraw at any time without penalty.

We are conducting this study to better understand how communication technologies influence family communication. This will entail your completion of a survey. Your participation is expected to take approximately 30 minutes to complete. The content of the survey should cause no more discomfort than you would experience in your everyday life.

Although participation may not benefit you directly, we believe that the information obtained from this study will help us gain a better understanding of parent-adult child communication. Your participation is solicited, although strictly voluntary. Your name will not be associated in any way with the research findings. Your identifiable information will not be shared unless (a) it is required by law or university policy, or (b) you give written permission. Furthermore, only aggregated, not individualized, data will be shared or published. It is possible, however, with internet communications, that through intent or accident someone other than the intended recipient may see your response. If you would like additional information concerning this study before or after it is completed, please feel free to contact us by phone or mail.

Completion of the survey indicates your willingness to take part in this study and that you are at least 18 years old. If you have any additional questions about your rights as a research participant, you may call (785) 864-7429 or write the Human Subjects Committee Lawrence Campus (HSCL), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7563, email irb@ku.edu.

Sincerely,

Jennifer Schon
Principal Investigator
Department of Communication Studies
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Appendix C: Survey

Communication Repertoire Size
Adapted from Schon (2012)

Instructions: Please check the box next to each communication technology that you currently use to communicate with your mother/father.

- ☐ Calling his/her landline phone
- ☐ Calling his/her cellular phone
- ☐ Sending him/her a text message
- ☐ Sending him/her a picture message
- ☐ Using a walkie-talkie smartphone app (such as IPTT, Zello, Haytell, Talkbox, Voxer)
- ☐ Using a group communication smartphone app (such as GroupMe, Beluga, PingChat)
- ☐ Using a smartphone app such as Snapchat or similar others
- ☐ Using the text/chat options within games such as DrawSomething or Words With Friends.
- ☐ Using Instagram, Flickr, Cinemagram, other photo-sharing apps/websites
- ☐ Using instant messaging (via computer or smartphone)
- ☐ Via email (using either computer or smartphone)
- ☐ Via video calls through programs such as Skype, FaceTime, Oovoo, or Tango
- ☐ Through Facebook, Google+, LinkedIn or a similar social networking website
- ☐ Through Pinterest
- ☐ Through Twitter or other microblogging website
- ☐ Through file sharing such as Dropbox, Google Docs, etc.
- ☐ Through sharing videos online, such as through YouTube, Vimeo, Dailymotion, etc.
- ☐ Through online gaming networks (such as those for Xbox 360, Playstation, Wii, etc.)
- ☐ Shared calendar such as Google Calendar, Cozi Family Organizer, Wiggio, or Keep and Share Calendar.
- ☐ Writing a blog
- ☐ Other _____
- ☐ Other _____

Example of follow-up frequency question:
How often do you communicate with him by calling his landline phone?
1 = Less than once a month
2 = monthly
3 = several times a month
4 = weekly
5 = several times a week
6 = daily
7 = several times a day

Example of satisfaction follow-up question:
I am satisfied with my mother's and my communication using her landline phone.
1 = strongly disagree
2 = disagree
3 = somewhat disagree
4 = neither agree nor disagree
5 = somewhat agree
6 = agree
7 = strongly agree

Adult Child's Desire For Connectedness Scale
Developed from Rettie (2003) and Licoppe (2004)

Directions: Indicate your level of agreement with the following statements by clicking the corresponding number.

1 = strongly disagree
2 = disagree
3 = somewhat disagree
4 = neither agree nor disagree
5 = somewhat agree
6 = agree
7 = strongly agree

1. I like when those close to me call and/or text throughout the day mainly just to exchange pleasantries (hello's, goodbye's).
2. I dislike when those close to me call and/or text throughout the day just to maintain contact.
3. I like when those close to me call and/or text throughout the day just to reassure me they are around.
4. I like when those close to me call and/or text throughout the day just to let me know they are thinking of me.
5. I like when those close to me call and/or text throughout the day about insignificant things happening in their day just so we feel connected.
6. I dislike when those close to me try to maintain a sense of connection with me throughout the day using calls and/or texts.
7. I like when those close to me call and/or text throughout the day just to keep in touch.
8. I like when those close to me call and/or text me throughout the day just to let me know they haven't forgotten about me.

Parent's Reported Connectedness Scale
Developed from Rettie (2003) and Licoppe (2004)

Directions: Indicate how frequently your mother/father engages in the following behaviors by selecting the corresponding option.

1 = less than once a month, 2 = a few times a month, 3 = weekly, 4 = daily, 5 = several times a day

1. My mother/father calls and/or texts mainly just to exchange pleasantries (hello's, goodbye's).
2. My mother/father calls and/or texts just to maintain contact.
3. My mother/father calls and/or texts just to reassure me s(he) is around.
4. My mother/father calls and/or texts just to let me know s(he) is thinking of me.
5. My mother/father calls and/or texts throughout the day about insignificant things happening in his/her day just so we feel connected.
6. My mother/father tries to maintain a sense of connection with me using calls and/or texts.
7. My mother/father calls and/or texts just to keep in touch.
8. My mother/father calls and/or texts just to let me know s(he) hasn't forgotten about me.

Interpersonal Communication Competence Scale
Rubin and Martin (1994)

Instructions: Here are some statements about how people interact with other people. For each statement, circle the response that best reflects your mother's/father's communication with others.

If your mother/father ALMOST ALWAYS interacts in this way, circle the 5,
If your mother/father communicates this way OFTEN, circle the 4,
If your mother/father behaves in this way SOMETIMES, circle the 3,
If your mother/father acts this way only SELDOM, circle the 2,
If your mother/father ALMOST NEVER behaves in this way, circle 1.

1. Allows friends to see who s(he) really is.
2. Other people know what s(he) is thinking.
3. Reveals how s(he) feels to others.
4. Puts her(himself) in others' shoes.
5. Doesn't know exactly what others are feeling.
6. Other people think that s(he) understands them.
7. S(he) is comfortable in social situations.
8. S(he) feels relaxed in small group gatherings.
9. S(he) feels insecure in groups of strangers.
10. When s(he)'s been wronged, s(he) confronts the person who wronged him/her.
11. S(he) has trouble standing up for her(himself).
12. S(he) stands up for his/her rights.
13. His/her conversations are pretty one-sided.
14. S(he) let others know that s(he) understands what they say.
15. Her/his mind seems to wander during conversations.
16. His/her conversations are characterized by smooth shifts from one topic to the next.
17. S(he) takes charge of conversations s(he) is in by negotiating what topics are talked about.
18. In conversations with others, s(he) perceives not only what they say but what they don't say.
19. Others can tell when s(he) is happy or sad.
20. S(he) has difficulty finding the right words to express himself/herself.
21. S(he) expresses herself/himself well verbally.
22. His/her communication is usually descriptive, not evaluative.
23. S(he) communicates with others as though they're equals.
24. Others would describe him/her as warm.
25. Others truly believe that s(he) cares about them.
26. S(he) looks others in the eye when speaking with them.
27. S(he) tells people when s(he) feels close to them.
28. S(he) can accomplish his/her communication goals.
29. S(he) can persuade others to his/her position.
30. S(he) has trouble convincing others to do what s(he) wants them to do.

Contact Frequency
Schon (2012)

Instructions: Select the answer that most closely reflects your behavior.

1. How often do you communicate with your mother/father?

1 = once a year
2 = several times a year
3 = monthly
4 = several times a month
5 = weekly
6 = several times a week
7 = daily

Contact Duration
Adapted from Jin and Pena (2010)

Instructions: Fill in the blank with a number.

1. Estimate the amount of time, **in minutes**, that you spend communicating with your mother/father in a **week**. Remember to include time for all of the channels you use, such as voice calls, text messages, emails, and smartphone apps. If you do not have weekly contact with your mother/father, take the amount of time you speak with him/her in a month (or year) and then divide it by 4 (52). _____

Communication Satisfaction Inventory
Hecht (1978)

Instructions: Please indicate your agreement with each statement below. For example, if you strongly disagree with an item, circle number seven.

1 = strongly disagree
2 = disagree
3 = somewhat disagree
4 = neither agree nor disagree
5 = somewhat agree
6 = agree
7 = strongly agree

1. My father/mother lets me know that I am communicating effectively.
2. Nothing is accomplished in our typical conversations.
3. I would like to have other conversations with my father/mother like the ones we typically have.
4. My father/mother genuinely wants to get to know me.
5. I am very dissatisfied with our typical conversations.
6. I usually have something else to do.
7. I feel that during our typical conversations, I am able to present myself as I want my father/mother to view me.
8. My father/mother shows me that (s)he understands what I say.
9. I am very satisfied with our typical conversations.
10. My father/mother expresses a lot of interest in what I have to say.
11. I do not enjoy our typical conversations.
12. My father/mother does not provide support for what he says.
13. I feel I could talk about anything with my father/mother.
14. We usually get to say what we want.
15. I felt that we could laugh easily together.
16. Our typical conversations flow smoothly.
17. My father/mother changes the topic when his/her feelings are brought into the conversation.
18. My father/mother frequently says things which add little to the conversation.
19. We usually talk about things I am not interested in.

Relationship Satisfaction Scale
Beatty and Dobos (1992)

Directions: Please click the circle under the number the best reflects how you feel about your relationship with your mother/father.

Unsatisfying	1	2	3	4	5	6	7 Satisfying
Unfulfilling	1	2	3	4	5	6	7 Fulfilling
Negative	1	2	3	4	5	6	7 Positive
Punishing	1	2	3	4	5	6	7 Rewarding
Bad	1	2	3	4	5	6	7 Good

Demographic Questions

Directions: For the below questions, select the option that best answers the question.

F. Are you eighteen or older?
Yes No

1. What is your sex?
- ❍ Male
- ❍ Female

2. What is your age? The corresponding number will appear to the right.

3. What is your race?
- ❍ White/Caucasian
- ❍ African American
- ❍ Hispanic
- ❍ Asian
- ❍ Native American
- ❍ Pacific Islander
- ❍ Other

4. Are you currently attending a college or university?

- ❍ Yes
- ❍ No

5. What is the highest level of education you have completed?

- ☐ Less than High School
- ☐ High School / GED
- ☐ Some College
- ☐ 2-year College Degree
- ☐ 4-year College Degree
- ☐ Master's Degree
- ☐ Doctoral Degree
- ☐ Professional Degree (JD, MD)

6. Check the box next to any of the below technologies that you use regularly (at least once a month) to communicate with other people.

- ☐ Using my landline phone
- ☐ Using my cellular phone
- ☐ Text messaging
- ☐ Picture messaging
- ☐ Walkie-talkie smartphone app (such as IPTT, Zello, Haytell, Talkbox, Voxer)
- ☐ Group communication smartphone app (such as GroupMe, Beluga, PingChat)
- ☐ Smartphone app Snapchat or similar app
- ☐ Text/chat options within games such as DrawSomething or Words With Friends.
- ☐ Instagram, Flickr, Cinemagram, other photo-sharing apps/websites
- ☐ Instant messaging (via computer or smartphone)
- ☐ Email (via computer or smartphone)
- ☐ Video calls through programs such as Skype, FaceTime, Oovoo, or Tango
- ☐ Facebook, Google+, LinkedIn or a similar social networking website
- ☐ Pinterest
- ☐ Twitter or other microblogging website
- ☐ File sharing such as Dropbox, Google Docs, etc. (don't check this box if you only file share with yourself, you must use it to file share with other people).
- ☐ Sharing videos online, such as through YouTube, Vimeo, Dailymotion, etc.
- ☐ Online gaming networks (such as those for Xbox 360, Playstation, Wii, etc.)
- ☐ Shared calendar such as Google Calendar, Cozi Family Organizer, Wiggio, or Keep and Share Calendar (don't check this box if you only use the calendar with yourself, you must use it to communicate with other people).
- ☐ A blog
- ☐ Other _____
- ☐ Other _____

7. Is the father who raised you during childhood still alive?

- ❍ Yes
- ❍ No

8. Do you have contact with him at least once a year?

- ❍ Yes
- ❍ No

9. Is the mother who raised you during childhood still alive?

- ❍ Yes
- ❍ No

10. Do you have contact with her at least once a year?
- ❍ Yes
- ❍ No

11. Estimate the combined annual household income of your parents (or parent if you only have one):
- ❍ Less than $30,000
- ❍ $30,000 – 39,999
- ❍ $40,000 – 49,999
- ❍ $50,000 – 59,999
- ❍ $60,000 – 69,999
- ❍ $70,000 – 79,999
- ❍ $80,000 – 89,999
- ❍ $ 90,000 – 99,999
- ❍ $100,000
- ❍ $200,000 or more

12. Select the current age of the father who raised you as a child. If you are unsure, make a guess.
_____ Age

13. What is his race?
- ❍ White/Caucasian
- ❍ African American
- ❍ Hispanic
- ❍ Asian
- ❍ Native American
- ❍ Pacific Islander
- ❍ Other

14. Select the current age of the mother who raised you as a child. If you are unsure, make a guess.
_____ Age

15. What is her race?
- ❍ White/Caucasian
- ❍ African American
- ❍ Hispanic
- ❍ Asian
- ❍ Native American
- ❍ Pacific Islander
- ❍ Other

Appendix D: Tables and Figures

Table 1

Percentage of Reported Use, Means and Standard Deviations for Frequency of Use, and Mean and Standard Deviation for Satisfaction of Use among Communication Technologies for Mothers and Fathers

	Use Percentage		Use Frequency		Use Satisfaction	
Technology	M	F	M	F	M	F
Landline phone	43%	36%	3.46 (1.55)	2.90 (1.45)	3.76 (.99)	3.67 (.87)
Cellular phone	93%	86%	4.55 (1.39)	3.84 (1.31)	4.05 (.94)	3.96 (.99)
Text or picture messaging	84%	78%	4.72 (1.47)	3.79 (1.58)	4.03 (.85)	3.82 (.98)
Walkie-talkie app	2%	1%	4.67 (1.37)	3.60 (1.95)	3.50 (.84)	3.60 (1.52)
Group communication app	5%	4%	4.00 (1.32)	3.36 (1.08)	4.00 (.87)	3.64 (.93)
Snapchat	5%	5%	3.55 (1.91)	3.17 (1.72)	3.80 (.83)	3.44 (1.10)
Photo-sharing website	9%	5%	3.97 (1.68)	3.00 (1.82)	3.94 (.95)	3.56 (1.38)
Instant messaging	9%	5%	3.85 (1.62)	3.24 (1.68)	3.79 (.77)	4.00 (.87)
Email	45%	49%	3.38 (1.43)	3.07 (1.29)	4.00 (.72)	3.85 (.86)
Video calls	19%	18%	2.62 (1.42)	2.36 (1.31)	4.07 (.83)	4.06 (.78)
Social networking/ micro-blogging sites	31%	20%	3.23 (1.57)	3.10 (1.50)	3.82 (.91)	3.67 (.78)
Sharing videos	5%	4%	3.12 (1.05)	3.27 (1.28)	3.76 (1.09)	3.47 (1.19)
Online gaming networks	1%	2%	3.50 (2.08)	2.83 (1.33)	3.25 (.50)	3.33 (1.03)

Note. M represents data for mothers, while F represents data for fathers.

Table 2

Zero-Order Correlations of All Test Variables.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1. FFrequency	----														
2. FDuration	.53***														
3. FICC	.44***	.29***													
4. FCSI	.46***	.33***	.72***												
5. FRSatisf.	.51***	.35***	.66***	.78***											
6. FRC	.64***	.52***	.39***	.38***	.46***										
7. FCRepert.	.34***	.27***	.27***	.25***	.30***	.41***									
8. PDConnect.	.19**	.09	.15**	.26***	.13*	.23***	.07								
9. MFrequency	.36***	.24***	.13*	.20***	.09	.17**	.13*	.26***							
10. MDuration	.16**	.62***	.00	.02	-.03	.21***	.15**	.19***	.46***						
11. MICC	.17**	.11*	.38***	.36***	.23***	.06	.15**	.17**	.32***	.11*					
12. MCSI	.13*	.07	.33***	.43***	.24***	.10	.16**	.33***	.40***	.17**	.71***				
13. MRSatisf.	.11*	.09	.26***	.33***	.37***	.13*	.12*	.21***	.41***	.22***	.52***	.72***			
14. MRC	.28***	.31***	.13*	.20***	.15**	.42***	.20***	.37***	.68***	.54***	.27***	.36***	.42***		
15. MCRepert.	.09	.11*	.14**	.22***	.12*	.12*	.39***	.17**	.36***	.23***	.27***	.35***	.29***	.29***	----

Note. Items that start with M are for mothers, with F are for fathers, and with P are for participants. ICC = Interpersonal Communication Competence; CSI = Communication Satisfaction Index; RSatisf. = Relationship Satisfaction; RC = Reported Connectedness; CRepert. = Communication Repertoire Size; DConnect. = Desire for Connectedness, * $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 1

Mother Communication Satisfaction as a Product of Mother Communication Competence and Mother Communication Repertoire Size

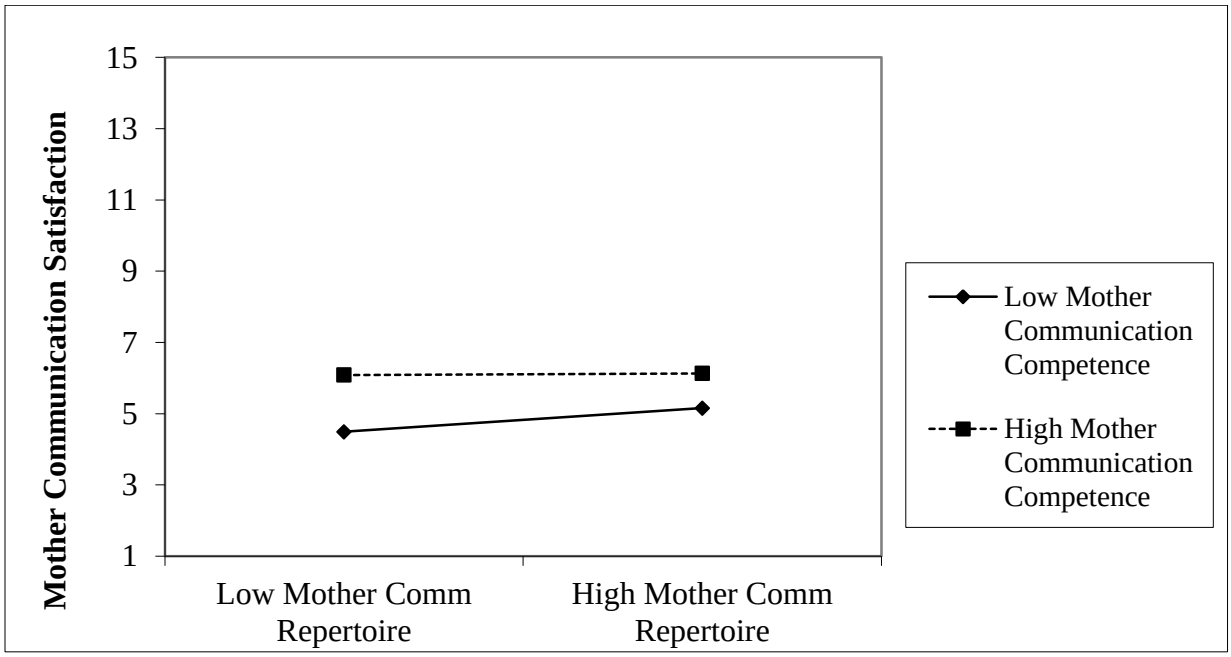

Figure 2

Father Relationship Satisfaction as a Product of Father Communication Competence and Father Communication Repertoire Size

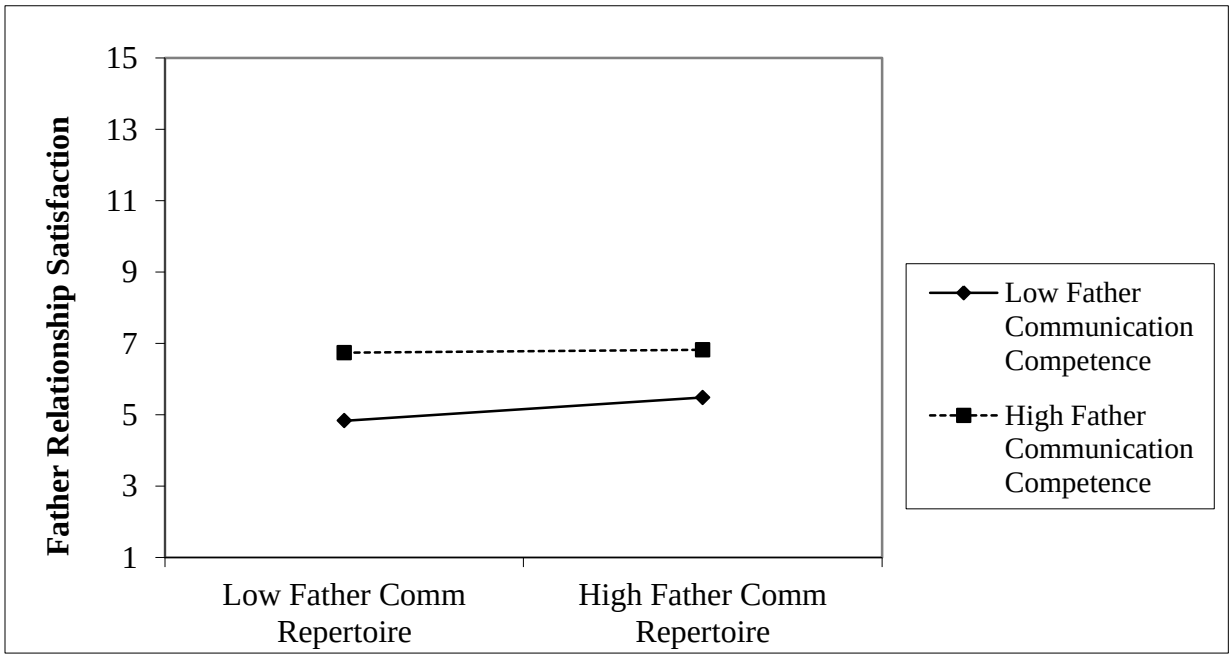

Figure 3

Mother Relationship Satisfaction as a Product of Mother Communication Competence and Mother Communication Repertoire Size

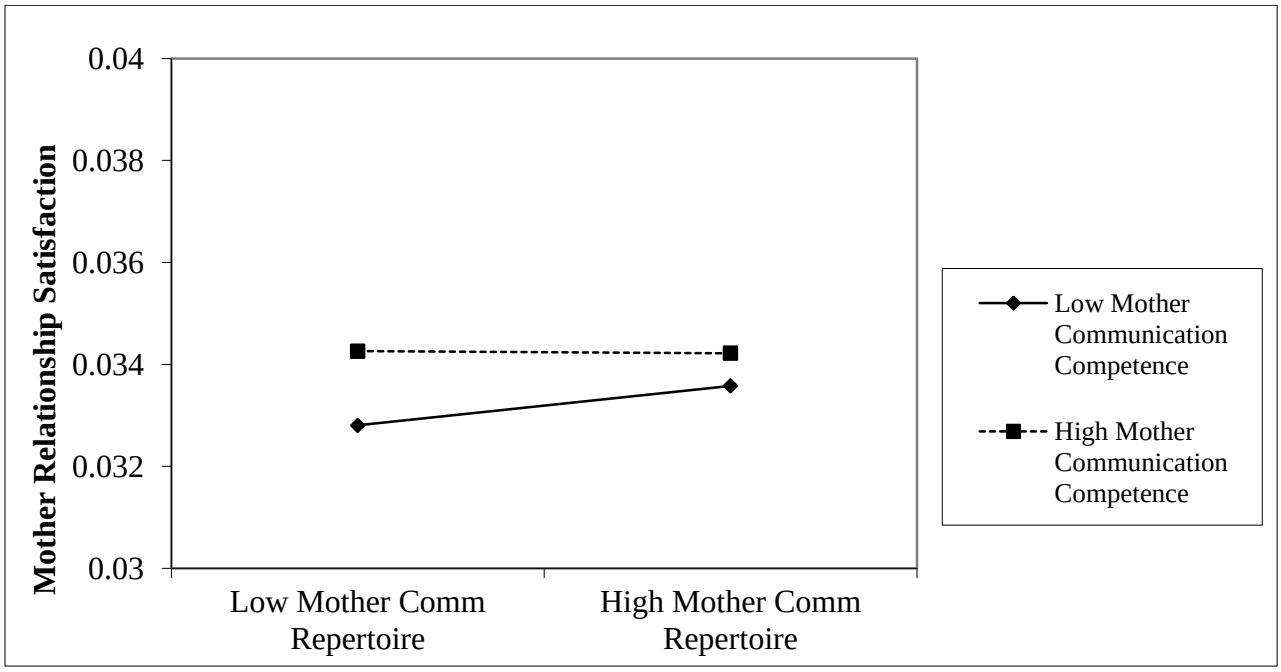

Figure 4

Father Communication Satisfaction as a Product of Participant Desire for Connectedness and Father Reported Connectedness