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COMMUNICATION CHANNELS, SOCIAL SUPPORT AND SATISFACTION IN LONG DISTANCE ROMANTIC RELATIONSIHPS

by

LIJUAN YIN

Under the Direction of Dr. Cynthia Hoffner

ABSTRACT

Based on uses and gratification theory, media richness theory, and social presence theory, the present study explores the role of different communication channels and social support in relationship maintenance among long distance dating partners. Specifically, how social support is related to relational uncertainty, how the use of different communication channels is related to social support variables, and what are main factors of relationship satisfaction are examined in this study. A total of 311 respondents participated in the study. All of four social support variables, emotional support, socializing, advice/guidance and support appraisals were found to be negatively related to relational uncertainty. In addition, both phone call and webcam use were positively related to all support behaviors and support appraisals, while email use was positively

related to advice/guidance and support appraisals. Finally, the regression results suggested that emotional support, socializing, support appraisals, phone call, and webcam use were positive predictors of relationship satisfaction, whereas text messaging negatively predicted relationship satisfaction.

INDEX WORDS: Long distance relationships, Communication channel, Social support, Relational uncertainty, Satisfaction

COMMUNICATION CHANNELS, SOCIAL SUPPORT, AND SATISFACTION IN LONG DISTANCE ROMANTIC RELATIONSHIPS

by

LIJUAN YIN

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of

Master of Arts

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2009

COMMUNICATION CHANNELS, SOCIAL SUPPORT AND SATISFACTION IN LONG DISTANCE ROMANTIC RELATIONSHIPS

by

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December 2009

DEDICATION

This thesis is dedicated to my parents and my husband, Yizhuo Zhang, who have supported me all the way since the beginning of my study. I love you!

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I would like to express my sincere gratitude to Dr. Cynthia Hoffner, my advisor, for providing direction, support and guidance during the course of this research. From the first vague proposal of this topic to latter queries on focus and connection, from questionnaire design to method of data analysis, she was always eager to encourage my ideas and help me solve difficulties. She always inspires me and keeps me in the right direction. I want to express my thanks for her consistent efforts and true desire to keep me on track.

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CHAPTER 1

INTRODUCTION

Relationships are essential to the quality of our daily life. Satisfying relationships are perceived as critical to people's well-being and mental health (Simpson & Tran, 2006). However, the social environment of relationships is changing so dramatically that many inner and outer barriers have threatened relationship stability and quality, for example, physical distance.

In the rapidly changing world, it is becoming more and more common for people to be separated from their significant others, due to various reasons such as study abroad, work in another city, or military service. Almost 20 years ago, researchers estimated approximately 30 to 40 percent of college students were involved in long distance romantic relationships (LDRRs) (Guldner, 1996; Stafford & Reske, 1990). In a 2002 study at a large university in the southeastern U.S., 20% of respondents reported that they were currently in LDRRs and 37% of respondents reported that they had been in LDRRs (Knox, Zusman, Daniels & Brantley, 2002). This suggests that currently LDRRs are still common.

Long-distance is a double-edged sword for relationships, especially for romantic relationships. On the one hand, living apart can be stressful and lonely for partners (Guldner, 1996). However, on the other hand, separation sometimes is perceived as allowing partners' freedom and autonomy (Sahlstein, 2004; Stafford, Merolla & Castle, 2006). Therefore, maintenance behaviors seem essential for LDRRs of high quality.

LDRRs have been studied for many years, and relationship maintenance behaviors have been assessed in many studies (e.g., Canary & Stafford, 1994; Dainton & Aylor, 2001; Rabby,

2007). However, one type of maintenance behavior, social support, was ignored in the LDRR literature. Social support as relationship maintenance has been frequently studied in geographically close relationships. Its buffering effect against stress has been demonstrated in the literature. However, in the long distance situation, social support has rarely been examined. Meanwhile, as the communication technology has rapidly developed in recent decades, a variety of communication channels have become available for people to maintain relationships in long distance situation. Therefore, it is necessary to re-evaluate the role of different channels in LDRRs.

Drawing from relational uncertainty theory (Knobloch & Solomon, 1999), literature on social support (e.g., Cobb, 1976; Cornman, Goldman, Glei, Weinstein & Chang, 2003; Vaux, 1988; Wethington & Kessler, 1986;), uses and gratification theory (Blumler & Katz, 1974), media richness theory (Daft & Lengel, 1986) and social presence theory (Short, Williams & Christie, 1976), the present study explores how social support is related to relational uncertainty, and how different communication channels contribute to the availability of social support. Furthermore, combining relational uncertainty, social support, and communication channel use, the present study examines what factors predict relationship satisfaction.

Participants were recruited from various online forums and social networking websites. They were asked to answer questions about their relationship satisfaction, relational uncertainty, social support, use of communication channels and general demographic information. To be qualified as participants, the individuals must be currently involved in a LDRR, and they must have initiated the relationship offline rather than online.

This study contributes to the LDRR literature in the following ways. First, it introduces social support variables as important factors in LDRRs. Second, the present study is among the first attempts to differentiate different communication channels in LDRRs. Specifically, it distinguishes between several different communication channels that can be used via the internet (i.e., email, instant messaging, and webcam).

CHAPTER 2

LITERATURE REVIEW

This chapter reviews previous studies in social support, relational uncertainty and views of new communication technologies on relationship maintenance. It first reviews the general studies on LDRRs, followed by the demonstrated influence of social support on relationship outcomes. Then, this chapter compares the different views of computer-mediated communication in early studies and recent studies. While previous research is reviewed, the hypotheses and research questions are also presented.

Defining Long Distance Romantic Relationships

LDRRs are a particular type of long distance relationships (LDRs). It is necessary to review the definition of LDRs before defining LDRRs. The criteria used to define LDRs in different studies are somewhat arbitrary. Some studies use miles that separate relationship partners as the key factor. Schwebel and his colleagues (1992) used 50 miles or more in their study, while Lydon, Pierce and O'Regan (1997) and Knox et al. (2002) used 200 miles or more to define a long distance relationship. Other studies asked respondents to self-define whether their relationship was long distance (Dainton & Aylor, 2001; Ficara & Mongeau, 2000; Maguire, 1999), which is believed to be a more valid approach (Dellmann-Jenkins, Bernard-Paolucci & Rushing, 1994). Moreover, some researchers used statements such as "my partner lives far enough away from me that it would be very difficult or impossible to see him or her every day" to identify long distance relationship partners (Guldner & Swensen, 1995; Maguire, 2007).

While there is no precise standard to define LDRs, Stafford (2005) proposes a general guideline: “Relationships are considered to be long distance when communication opportunities are restricted because of geographic parameters and the individuals within the relationship have expectations of a continued close connection” (p. 7). This guideline points out two key points in LDRs. First, the frequency of face-to-face communication is greatly reduced in LDRs; therefore, mediated channels need to be explored to break the restrictions in communication opportunities. Second, what individuals expect to receive from the relationships is worth noting; if their expectations are not met, the relationships may be problematic.

LDRRs are long distance relationships of a romantic nature, mainly referring to dating relationships or premarital relationships. The people involved in LDRRs are mostly college students because LDRRs are considered as prevalent as geographically close romantic relationships on campus (Stafford et al., 2006). In most cases, however, long distance marriage is treated as different from LDRRs, because marriage is more complicated than dating relationships and married individuals use different maintenance strategies than do dating individuals (Dainton & Stafford, 1993).

Stafford (2005) identifies three types of LDRRs: (1) relationships initiated face-to-face; (2) relationship initiated online but migrated offline; and (3) pure virtual relationships of which the process of initiating, development and maintenance are totally based on the internet. Much literature has focused on relationships that started on the internet since the use of communication technologies has generated many chances to meet people in a virtual environment, but few

studies focus on people who transform their relationships from face-to-face communication to the long-distance situation.

Rabby (2007) calls people who initially met their partners offline but are maintaining the relationship long distance as “cyber emigrants.” In other words, the relational partners immigrate to cyberspace due to various reasons such as college study, job relocation, military recruitment, and so on. This type of LDRRs deserves attention because people initiate their relationships mostly offline rather than online even though online dating has increased in recent years. For example, a Pew Internet study conducted by Madden and Lenhart (2006) indicated that only 3% of their sample of internet users met their partners online. Compared to those who first met their partners face-to-face, people who initiated their relationships online are still a relatively small portion of the entire population.

Stress of Separation and Relational Uncertainty

LDRRs are presumed to be stressful and depressing by some researchers. The responses from college students on coping with long-distance dating relationships demonstrate that physical separation constitutes a stressor for long distance partners (Westefeld & Liddell, 1982). Guldner (1996) also claimed that separation from partners inherently results in distress. He found significantly higher levels of “feeling lonely” and “feeling blue” among long distance partners than among proximate couples. In another study, females reported the most elevated levels of distress (Helgeson, 1994). Although LDRRs are not inherently problematic (Dainton & Aylor, 2001; Sahlstein, 2004; Stafford, 2005), individuals involved in LDRRs do experience some level of stress.

In LDRRs, uncertainty about the relationship is always considered as a major source of distress for individuals, leading to conflict interactions between romantic partners (e.g., Dainton & Aylor, 2001; Maguire, 2007; Sahlstein, 2006). In interpersonal relationships, uncertainty stems from the degree of confidence about self, the partner and the relationship itself (Knobloch & Solomon, 1999). According to uncertainty reduction theory (URT) (Berger & Bradac, 1982; Berger & Calabrese, 1975), the driving force behind relationship development and maintenance is the progressive reduction of uncertainty about the partner and the relationship.

Although URT is most often applied in research on relationship development, it also can be employed in the study of established relationships (Planalp & Honeycutt, 1985). Individuals in established relationships appear to experience relational uncertainty rather than general uncertainty (Dainton & Aylor, 2001). Relational uncertainty is defined as uncertainty about the status or future of the relationship (Ficara & Mongeau, 2000). Knobloch and Solomon (1999) point out that the issue of relational uncertainty is especially prominent in established relationships when the participants spend a great deal of time apart. They defined relational uncertainty as having four dimensions, including the doubt about norms for appropriate behavior, mutuality of feelings between partners, the definition of the association, and the future of the relationship.

Emmers and Canary (1996) found physical distance was a factor that induces uncertainty, suggesting that uncertainty is more likely to occur in LDRRs. Although Dainton and Aylor (2001) didn't find a significant difference between LDRRs and geographically close relationships in

relational uncertainty, they did find LDRRs with some face-to-face contact were significantly more certain of their relationships than were those in LDRRs without face-to-face interaction.

Relationship uncertainty could be problematic in LDRRs because of the separation of couples and lack of face-to-face interactions (Sahlstein, 2006). Achieving an adequate level of relational certainty seems to be beneficial for participants in romantic relationships (Knobloch & Solomon, 2003). Previous studies have found relationship uncertainty was linked with several relational variables. Specifically, relationship uncertainty was negatively correlated with trust, especially for those who have no face-to-face contact in LDRRs (Dainton & Aylor, 2001), and negatively associated with commitment and liking (Ficara & Mongeau, 2000). In addition, doubt about a relationship's future can decrease relationship stability (Knobloch & Solomon, 1999). Focusing on the relationship between relational uncertainty and relationship satisfaction, researchers have found dating partners with increased relational certainty also report greater relationship satisfaction (Baxter & Bullis, 1986; Dainton, 2003). In a recent study, Maguire (2007) found people who reported feeling "certain" or "moderately uncertain" about the relationship reported significantly more satisfaction and less distress than those who said they were "uncertain" about the relationship.

From the perspective of Uncertainty Reduction Theory, couples in LDRRs have a need to maintain relationships as a way to reduce relationship uncertainty. Maintenance strategies themselves serve as a means for uncertainty reduction (Dainton & Aylor, 2001). Several maintenance strategies have been found to be associated with less relational uncertainty, including openness, assurances, and positivity (Ficara & Mongeau, 2000). Self-disclosure is also

a way to reduce uncertainty (Stafford & Canary, 1991). Moreover, as uncertainty is reduced, information seeking will decrease, too (Bradac, 2001). Although social support has rarely been studied in LDRRs, Messman, Canary and Hause (2000) identified it as one of the relationship maintenance behaviors in their study. Because relational uncertainty has been considered as a root of distress in LDRRs, the present study is interested in whether social support is a way to reduce relational uncertainty and improve relationship quality.

Social Support as Relational Maintenance

Maintaining romantic relationships at a distance can be difficult. However, relational maintenance behaviors have been found to be linked to positive relational outcomes.

Dindia and Canary (1993) elaborated four goals of relational maintenance in face-to-face relationships: 1) to keep relational continuity; 2) to keep the fundamental qualities of the relationship; 3) to keep a relationship in satisfactory condition; and 4) to repair the relationship. Among these goals, maintaining relationship satisfaction is usually treated as one of the most important factors for relationship quality.

Relational satisfaction is frequently studied as associated with relational maintenance (e.g., Dainton & Aylor, 2002; Stafford & Canary, 1991; Stafford & Reske, 1990). In order to achieve satisfaction in relationships, people engage in strategic maintenance behaviors as well as routine maintenance behaviors. While maintenance strategies have a clear goal, for example, giving advice when needed, routine maintenance behaviors occur at low level of consciousness and are believed to be unintentional (Dainton & Stafford, 1993), such as casual talk.

The views of relational maintenance were developed from social exchange theory, which assumes individuals form, develop and terminate relationships based on rewards and costs, or potential rewards and costs, associated with that relationship (Kelley & Thibaut, 1978). This theory can be applied to relational maintenance in an equity-based approach (Canary & Stafford, 1994; Dainton, 2003; Messman et al., 2000; Stafford & Canary, 1991). Equity theory predicts that "people are content when both persons have equal ratios of inputs to outcomes, that people are distressed when involved in an inequitable relationships and that people try to restore and maintain equity" (Canary & Stafford, 1994, p. 7). A fair relationship occurs when the ratios of inputs to outcomes are identical for the two parties (Messman et al., 2000). Researchers have found that being either over-benefited or under-benefited results in emotional distress, while people in equitable relationship report the highest satisfaction (Sprecher, 1986; Van Yperen & Buunk, 1990).

A different view about romantic relationship was proposed by Mills and Clark (2001). They considered close romantic relationships as being communal relationships, in which the individuals are expected to give benefits or show concern to the other when the other has a need, such as information, resources, care and so forth. In a strong close romantic relationship, both partners have a high degree of motivation to be responsive to the other's need, without expecting a specific benefit in return. Communal rule was judged to be more realistic for romantic relationships than were exchange or equity rules (Grote & Clark, 1998).

Previous studies have investigated various relational maintenance behaviors (see review by Stafford, 2005). While some categories overlapped in definitions, one important maintenance

behavior in romantic relationships, social support, has not been fully understood in long distance situations.

The Definition of Social Support

Social support has been conceptualized in different ways in previous studies. Yet little agreement has developed among researchers as to salient variables that constitute the construct of social support (Streeter & Franklin, 1992). Some scholars (e.g., Cramer, 2004a, 2004b) equate emotional support with social support. Cohen and Wills (1985) defined emotional support as expressions of concern, compassion, sympathy and esteem for another individual. This is consistent with Buhrmester and his colleagues' (1988) definition of emotional support as providing comfort to others. In this perspective, emotional support basically refers to communicating caring to an intimate.

While emotional support is considered as personal feelings or behaviors that were perceived to be supportive of another, social support has a wider range of dimensions. Albrecht and Adelman (1987) defined social support as communication that helps individuals through stressful life events. Rather than viewing support as an individual effort, Weber and Patterson (1996) view social support as a complex product of communication networks. This perspective suggests that the source of social support is an important component, too.

Some researchers propose that social support is a multidimensional concept. For example, Vaux and his colleagues (1986) concluded that social support is best measured with three dimensions: (1) support network resources, including the size, structure, and relationship characteristics of support networks; (2) specific supportive acts; and (3) subjective appraisals of

support (beliefs that one is involved, cared for and respected, and one's social needs are met). Similar to that perspective, Cornman et al. (2003) also propose three components of social support measurement: (1) measures of social networks or social ties that reflect the degree to which a person is socially integrated (2) measures of received support that indicate what a person has actually received or is reported to have received, and (3) measures of perceived support. Their synthesis reflects Vaux's (1988) and Vaux and Harrison's (1985) argument about social relationships, social networks and social support.

The present study focuses on the partner's support rather than support from one's entire social network. Therefore, only supportive acts/behaviors and support appraisals are considered in the research.

Social support behaviors have been categorized in different ways (see review by Malecki & Demaray, 2003). Reviewing the work of previous researchers, Vaux, Riedel and Stewart (1987) suggest five modes of social support behaviors which are commonly used: emotional support, socializing, practical assistance, financial assistance, and advice/guidance. Emotional support consists of behaviors expressing comfort or caring when someone is upset about something. Socializing refers to meeting with or taking part in social activities together with someone who needs help. Practical assistance is composed of behaviors that deal with practical problems. Financial assistance involves behaviors that help someone who is short of money. Finally, advice/guidance means providing suggestions or information to someone who needs help.

This measurement can be used to tap supportive behaviors enacted in the face of known stressors, and addresses the availability of social support. Of the five types of social support,

emotional support, socializing and advice/guidance will be included in this study; the other two types of support (practical assistance and financial assistance) will be excluded from consideration. First, practical assistance is measured by Vaux et al. (1987) as various behaviors in response to someone's need of physical assistance, such as giving a ride, loaning tools or appliances, and helping with a move. Usually the person who provides practical assistance is required to present in order to solve the problem. Therefore, in a long distance situation, people can rarely provide practical assistance due to the restriction on face-to-face meeting. Second, although financial assistance can be easily provided from a distance, the availability is largely determined by whether the partner has the money to lend or pay for the other one rather than what communication channels the couples use. Thus, based on the reasons above, only emotional support, socializing and advice/guidance will be included in the present study.

The other component of social support, subjective appraisals, is defined as the cognitive appraisal of being reliably connected to others (Barrera, 1986) and has been demonstrated to be identical to perceived support (O'Reilly, 1995). This definition is consistent with Cobb's (1976) view of social support as information that leads to one's perception that he/she is cared for and loved, esteemed and valued, and is a member of a network of mutual obligation. Therefore, support appraisals also can be considered as one's evaluation of specific social support behaviors and as the effectiveness of social support behaviors.

Social Support, Stress and Relationship Satisfaction

Well-documented studies have shown that social support can foster positive health outcomes and psychological well-being, and therefore is beneficial to one's psychological and

physical adjustment (Cobb, 1976; Cornman et al., 2003; Vaux, 1988; Wethington & Kessler, 1986). There is solid evidence that social support has a buffering effect against people's stress (Cohen & Wills, 1985; Cohen, Sherrod & Clark, 1986; Wethington & Kessler, 1986; Yate, 1995). Supported people are also physically and emotionally healthier (Shumaker & Brownell, 1984).

Social support is also studied in the context of relational consequences and qualities, particularly concentrating on relationship satisfaction. Cutrona (1996) has described the process in which support may increase relationship satisfaction. First, during stress, support may prevent emotional withdrawal and isolation within the relationship. Second, support may lessen depression. Third, support may hinder conflict escalating within the relationship. And fourth, by providing positive experiences, support may increase emotional intimacy.

Social support plays an important role in romantic relationships. In close relationships, people often expect to receive a certain amount of support from those to whom they are close (Weber, Johnson & Corrigan, 2004). Therefore, in the maintenance of LDRRs, how people perceive and evaluate their partner's support is pivotal to their feeling of stress and their evaluation of the relationship.

The view that increased support from a partner may increase relationship satisfaction comes from the person-centered or client-centered theory of Rogers (Rogers, 1959). It assumes that self-actualization, which leads to relationship satisfaction, is generated by the personal feeling that they are understood and accepted by a significant other. Therefore, in the therapeutic approach, encouraging partners to be more supportive to each other is important to relationship maintenance.

Partner's support has been found to be effective in dealing with one's level of distress and is associated with better relationship functions (Barbee & Cunningham, 1995; Collins & Feeney, 2004; Cramer, 2004a, 2004b, 2006; Cutrona, 1986; Pasch, Bradbury & Davila, 1997). In romantic relationships, researchers have found receiving support from one's dating partner has a positive effect on relationship qualities, including the level of intimacy, the bond between dating partners, the feelings of responsibility for and the commitment to the relationship (e.g., Fincham & Bradbury, 1990; Sarason, Shearlin, Pierce, & Sarason, 1987).

In addition, a series of studies has demonstrated that supportive partners help to increase relationship satisfaction (e.g., Cramer, 2006; Pasch & Bradbury, 1998). Cramer (2004a, 2004b) found that emotional support was directly correlated with relationship satisfaction in both studies. Depression was also found to be negatively associated with both support and relationship satisfaction, implying a mediating effect for depression (Cramer, 2004a).

The preceding review has shown that relational uncertainty can be a source of stress in LDRRs, and there is solid evidence that social support behaviors can have a buffering effect (Cohen, Sherrod & Clark, 1986; Cohen & Wills, 1985; Wethington & Kessler, 1986; Yate, 1995). In other words, people who feel supported by others are likely to experience a lower level of stress. In a long distance situation, the degree of stress could be reduced by the reduction of relational uncertainty. Therefore, people perceiving higher degree of support from their partners may feel less uncertain about the relationship. Thus, the present study hypothesizes that in long distance romantic relationships, social support behaviors and support appraisals will be associated with lower relational uncertainty. Therefore, the following hypotheses are proposed:

H1a: Emotional support is negatively related to relational uncertainty.

H1b: Socializing is negatively related to relational uncertainty.

H1c: Advice/guidance is negatively related to relational uncertainty.

H1d: Social support appraisals is negatively related to relational uncertainty.

Previous studies have provided evidence of social support's positive effect on relationship satisfaction in geographically close romantic relationships. In a long distance situation, establishing a supportive relationship is also important for romantic partners and relationship quality. Therefore, social support behaviors and social support appraisals should be predictors of relationship satisfaction in LDRRs. This leads to the next set of hypotheses:

H2a: Emotional support is positively related to relationship satisfaction.

H2b: Socializing is positively related to relationship satisfaction.

H2c: Advice/guidance is positively related to relationship satisfaction.

H2d: Social support appraisals is positively related to relationship satisfaction.

Communication Channel Choice in Relational Maintenance

Related Theories for LDRRs

In LDRRs, due to the restriction on face-to-face interaction with one's partner, social support is provided primarily via multiple media channels, including both the telephone and computer-mediated communication (CMC) channels. Due to the different characteristics of media channels, it is worth examining which channels are more suitable to particular types of support (emotional support, socializing and advice/guidance) and which channels are more effective to deliver social support.

In LDRRs, communication opportunities are usually restricted (Stafford, 2005). Because people can rarely meet their partners face-to-face in LDRRS, more and more interpersonal communication studies have begun to explore relationships that involve the use of new communication technologies. It is believed that the emergence of computer-mediated communication (CMC) provides individuals with new ways to maintain relationships that were initiated in a face-to-face situation (Barnes, 2003; Parks & Floyd, 1996).

As communication technologies have developed, scholars have shown increasing interest in understanding people's use of mediated channels. Most studies use uses and gratifications, media richness theory or social presence theory to explain long-distance relationship maintenance and the interaction among communication channels.

According to Blumler and Katz (1974), uses and gratifications theory suggests that media users play an active role in choosing and using the media. It is believed that media users take an active part in the communication process and are goal oriented in their media use, therefore seeking out media sources that best fulfill their needs. Uses and gratifications has been used to explain why people prefer using certain types of communication channels to maintain long distance relationships. It is the gratification opportunities afforded by different media which enable people to go beyond the limitations of face-to-face interaction in long-distance relationships (Dimmick, Ramirez, Wang & Lin, 2007). In their study, Dimmick and his colleagues (2007) assumed that the frequency of interactive media use, including phone, e-mail, and instant messaging, is influenced by individuals' expectations concerning the gratification-utility to be derived from mediated interaction, and that the obtained

gratification-utilities in turn influence the frequency of media use for relational maintenance. Similarly, O'Sullivan (2000) suggested that users make conscious decisions about what technology to use depending on the type of message that they are going to convey to the other person. Dimmick, Kline, and Stafford (2000) found that telephone is better than email to gratify people's need to express emotions, exchange information and find companionship. Yet, for people who live far apart and have no time to meet in person, the asynchronous mode of email communication exhibits a general superiority over the telephone for gratification opportunities. It seems that the telephone is used more than email for affective purposes in personal relationships because telephone allows synchronous interaction and delivers emotions via voice. Some researchers confirm the idea that individuals prefer written forms of communication such as emails or letters because they want to control the timing and pace of interaction (Dainton & Aylor, 2002; Walther, 1996), and provide a positive and an idealized image of themselves to their lovers (O'Sullivan, 2000; Rabby & Walther, 2003).

In order to explore differences in the use of different communication channels, it will be useful to look at theories that link media choice to the characteristics of communication channels – media richness theory and social presence theory.

The assumptions of media richness theory are that (1) people desire to overcome uncertainty, and (2) different media have different levels of richness and thus are suited to different tasks. According to Daft and Lengel (1986), media richness represents four functions including (1) the medium's capacity for immediate feedback, (2) the number of cues and channels available, (3) language variety; and (4) the degree to which the individuals focus on their recipients. They

noted that richer mediums allow for the use of "natural" language and are better equipped to transmit verbal and nonverbal cues. In a study on media richness theory, D'Ambra, Rice and O'Connor (1998) suggested that the richness of media is media's capacity of delivering message, including facilitating feedback, supporting multiple cues, allowing for variety in language usage, and supporting a personal focus. Therefore, they believe that media richness theory can be applied to identify which medium is most appropriate for reducing uncertainty and equivocality of the message in the communication process.

Similar to media richness theory, social presence theory (Short, Williams & Christie, 1976) is employed to account for the influence of CMC on relationship maintenance in terms of cues. Social presence is a "sense of being with another in a mediated environment" (Biocca, Harms & Burgoon, 2003, p. 14). This approach maintains that the reduction of nonverbal cues available in many forms of telecommunication leads to reductions in the capacity to transmit and receive interpersonal impressions and warmth. Furthermore, Short and his colleagues (1976) hypothesized that the users of any given communications medium are in some sense aware of the degree of social presence of the medium and therefore tend to avoid using the medium for certain types of interactions, specifically, interactions requiring a higher degree of social presence than they perceive the medium to have. From this perspective, therefore, the perception of social presence is linked to people's goals and their choice of media use.

Social presence theory has been called the "cues-filtered-out" approach by Culnan and Markus (1987). It posits that computer has a low degree of social presence because it filtered out social context cues (nonverbal cues). This approach argues that the characteristics of media alter

the nature and interpretation of messages and implies that such effects are inherent whenever people communicate using computers (Walther, 1995).

Early Views of CMC

The view of CMC in terms of cues has changed over the past two decades, as new modes of communication technology that allow not only text but also voice and video have been included in more and more studies. In early studies, face-to-face communication was generally considered the richest communication medium because it allows immediate feedback and a wide range of cues, whereas CMC was viewed as cue-limited, shallow and impersonal because of the reduction in communication cues (e.g., Parks & Floyd, 1996; Poster, 1990). In contrast, face-to-face communication involves both verbal behaviors and complex non-verbal cues, such as facial expressions, gazes and gestures. Features of CMC, such as limited nonverbal information, delayed feedback, greater ability for editing messages prior to sending them, and greater opportunities for self-presentation and manipulation of information alter the process of maintaining relationships (Wright, 2004).

From this perspective, a central issue in the research about CMC and relationship maintenance is whether and how the interaction between relationship partners is affected by the relative absence of nonverbal cues when communicators substitute CMC for face-to-face encounters (Walther, Loh & Granka, 2005). A review by Hiemstra (1982) suggested that when a relationship transforms from face-to-face to long distance, often maintained via computer, the communication between partners seems to be experienced as less friendly, emotional, and

personal, and more businesslike, depersonalized and task oriented. Walther (1992) also claimed that CMC is inappropriate for highly personalized interactions.

In a study of cues of mediated communication, Burgoon and her colleagues (2002) concluded that studies in the 1980s or before believed mediated communication creates less immediacy and involvement. In addition, Walther and Parks (2002) found that early studies on CMC claimed that the absence of nonverbal cues denies users important information about partners' characteristics, emotions, and attitudes, resulting in less sociable, relational, understandable, and/or effective communication. The relative absence of nonverbal communication cues also increases the chances of being misunderstood and serves as a likely breeding ground for conflicts. In sum, early studies tended to view CMC as unlikely to foster effective interpersonal and relational maintenance.

Recent Views of CMC

Although the studies above clearly point out the disadvantages of CMC, their research is predominately based on the assumption that CMC is equal to text-based CMC. With recent developments in new technologies, newer modes of CMC, such as voice chat and video conferencing, allow people to exchange not only textual but also audio and visual messages. As many researchers have begun to re-evaluate the characteristics of CMC, the old theories of CMC have been challenged (e.g., Hu, Wood, Smith & Westbrook, 2004; Kim, Kim, Park & Rice, 2007; Valkenburg & Peter, 2007). Text-based CMC has different characteristics from audio- or video-based CMC, and they should be treated differently while studying relationship maintenance via these channels. Some researchers argue that text-based CMC increases social

distance between participants, reduces pressure to conform, and may encourage uninhibited behavior (e.g., Bos, Olson, Gergle, Olson & Wright, 2002). Kehrwald (2007) argued that the relative leanness of the textual medium creates conditions which make communication in this medium potentially difficult. However, the multiple elements of audio- or video-based CMC make long distance communication easier and more effective. Not only can voice chat via the internet simulate a phone call, but video-mediated communication (VMC) via webcam allows people to see, hear, and "touch" each other. It is important to know whether VMC can compensate for the lack of face-to-face interaction.

VMC has been available for 70 years, but this type of technology has recently become a common means for communicating from geographically dispersed locations (Fullwood, 2007). Current studies in VMC overwhelmingly focus on the organizational context. The reason might be that compared with individuals, companies have better internet and equipment conditions to communicate with each other via video talk. The research suggests that there are advantages to seeing the face for communication and that VMC is very similar to face-to-face conversations (Campbell, 1998). Some studies note that people may benefit from VMC (e.g., Merkle & Richardson, 2000; Monk & Gale, 2002; Walther, Loh & Granka, 2005). For example, VMC allows people to indicate their understanding by referring the nonverbal cues (see review by Finn, 1997), therefore reducing the risks of miscommunication. VMC is also better than text-chat in trust development (Bos et al., 2002).

Video-mediated communication seems attractive to those who are involved in LDRRs although thus far little literature has studied its impact on relationships. In LDRRs, people have

lost the opportunity to meet each other interpersonally. In this case, although no tactile communication occurs, VMC may offer long-distance couples the interaction of both verbal and nonverbal messages. For example, in a focus group study conducted by Chang (2003), participants agreed that webcam or even videoconferencing would be attractive to use. One student stated that he can "touch" his partner by using the webcam. However, among the four focus groups, only one student reported using the webcam to maintain his LDRR. The low rate of webcam use may result from different long-distance situations among respondents. People who meet their partner once a week seem less likely to use webcam than those who can only meet their partner several times a year or less often. It seems that physical distance is an important factor in predicting the use of communication channels. In addition, economic status may be related to the use of video-based communication. People with higher income are more likely to be able to afford the cost of wideband internet. In a survey conducted in February-March 2005 by Pew Internet and American Life Project (Rainie, 2005), 16% of American adult internet users reported having used webcam to view another person online. It is likely that the percent would be higher if the participants were limited to long distance dating partners. In addition, at present, the cost of buying a webcam and installing high-speed internet is much cheaper than it was in 2005. Therefore, the percent of people who use webcam has undoubtedly grown since then.

Channel Choice and Social Support

Traditionally the interaction of social support is defined to be the exchange of verbal and nonverbal messages conveying emotion, information, or referral, to help reduce someone's

uncertainty or stress (Walther & Boyd, 2002), and "whether directly or indirectly, communicate to an individual that she or he is valued and cared for by others" (Barnes & Duck, 1994, p. 176). As the number of internet users is increasing rapidly, the study of computer-mediated social support (CMSS) has become an important issue for researchers. Recent literature on computer-mediated CMSS has predominantly focused on support seeking activities on the internet and the influence of online social support groups. While some researchers have cautioned that internet use could decrease social ties and social support (Kiesler & Kraunt, 1999; Nie, 2001), a number of studies demonstrate that CMC helps form and maintain online relationships that can facilitate the exchange of social support (e.g. Hu, et al., 2004; Kim et al., 2007; Parks & Floyd, 1996; Turner, Grube & Meyers, 2001; Valkenburg & Peter, 2007; Walther & Boyd, 2002; Zhao, 2006). Although little is known about how people use different channels for social support and in what ways communication technology influences social support, some studies have demonstrated that the use of different channels of CMC is differently related to perceived social support and the quality of life. For example, Swickert and his colleagues (2002) found that social support is marginally related to interaction via instant messaging, but not related to the use of email. Leung and Lee (2005) found talking on the phone was significantly correlated with overall social support. In a study by Morgan and Cotton (2003), the increased use of both instant messaging and email were correlated with decreased depression symptoms. White and his colleagues (1999) also reported when e-mail access was provided, loneliness was decreased and the quality of life was improved.

Not only is the use of CMC related to perceived support in general, but some studies have demonstrated that different channels of CMC may be suitable to different modes of social support. Wright's (2002) study of an online cancer support community indicates that receiving emotional support online has the disadvantages of not being able to detect deceit, hear tone of voice, and receive immediate feedback. In the study of multimodal CMC and social support, Xie (2008) found voice chat room was best suited for companionship while text-based online forum was used primarily for informational support. He also found that the exchange of emotional and instrumental support was most likely to occur via instant messaging as compared to voice chat room and online forum. However, the study didn't differentiate the use of text, voice-chat, and the use of webcam in IM interaction. Therefore, it is not possible to tell whether the text, voice, or video facilitated the exchange of emotional and instrumental support.

Although the literature has provided evidence that people may use different communication channels for different purposes, and that those channels may be suitable for different relationship maintenance behaviors, no study has examined them in LDRRs, at least in the literature reviewed for the present study. Therefore, the present study probes how the use of CMC channels relates to the exchange of social support between long-distance romantic partners. The findings will contribute to the CMC literature, research on LDRRs, as well as social support studies.

As discussed above, it seems that emotional support may be better delivered via voice- or video-based channels, which enable richer social presence and contextual cues (Wright, 2002; Xie, 2008). Therefore, the following hypotheses and research questions are proposed:

H3a: The use of telephone call is positively related to emotional support.

H3b: The use of webcam is positively related to emotional support.

R1: How will the use of (a) text messaging, (b) email, and (c) instant messaging be related to emotional support?

Socializing usually involves companionship with others. Thus, in a long distance situation, socializing should be better delivered via synchronous interaction than asynchronous communications. Of the communication channels, phone call, instant messaging and webcam have high synchronicity, whereas texting and email are with low synchronicity. Therefore, the following hypotheses and research question are proposed.

H4a: The use of telephone call is positively related to socializing.

H4b: The use of instant messaging is positively related to socializing.

H4c: The use of webcam is positively related to socializing.

R2: How will the use of (a) text messaging and (b) email be related to socializing?

Based on media richness theory and social presence theory (Daft & Lengel, 1986; D'Ambra et al., 1998; Short et al., 1976), a text-based environment should be more suitable to simple tasks (e.g., delivering information) for which non-verbal cues may not be necessary. Different from emotional support, which requires the exchange of emotional feelings, advice/guidance in most cases means telling the other what to do or helping to figure out a situation. Therefore, providing advice/guidance is generally a simple task. The following hypotheses and research questions are proposed:

H5a: The use of text messaging is positively related to advice/guidance.

H5b: The use of email is positively related to advice/guidance.

H5c: The use of instant messaging is positively related to advice/guidance.

R3: How will the use of (a) telephone call, and (b) webcam be related to advice/guidance?

Support appraisals reflects the overall perceived effectiveness of support behaviors. Although the relationships between communication channel use and the availability of different modes of support behaviors have been discussed to some extent, the relationship between individuals' evaluation of overall support and the frequency of communication channel use has barely been studied. Therefore, this question is proposed:

R4: How will the use of different communication channels be related to support appraisals?

Communication Channels and Relationship Satisfaction

Little research has focused on the relationship between the use of various communication channels and relationship satisfaction, although it has been demonstrated that individuals who have no face-to-face communication with their partners tend to have the lowest satisfaction in their relationships. In a recent study by Dainton and Aylor (2002), only the use of telephone was found to be positively associated with relationship satisfaction. Face-to-face, internet, and letter use were not significantly related to satisfaction. However, this study didn't differentiate text-based and video-based computer-mediated channels. Since the video-based computer-mediated channel incorporates image as well as voice, it contains greater cues than the telephone. Therefore, the following hypotheses and research questions are proposed:

H6a: The use of telephone is positively related to relationship satisfaction.

H6b: The use of webcam is positively related to relationship satisfaction.

R5: How are the use of (a) text messaging, (b) email, and (c) instant messaging related to relationship satisfaction?

CHAPTER 3

METHODOLOGY

Procedures

An online survey was conducted on www.surveymonkey.com. Participants were recruited from five online forums, classified websites and social networking websites: www.facebook.com, www.craigslist.com, www.loveshack.org, www.groups.yahoo.com, and www.ivillage.com. The recruiting message was posted on various message boards of those websites (see Appendix A). Respondents included both females and males who are age 18 or older. To qualify as participants, they must be single, involved in a dating relationship that was initiated offline, and currently separated from their partners by distance.

Participants

A total of 311 complete responses were collected for this study. Of the participants, there were 169 (54.3%) females and 125 (40.2%) males, while 17 (5.5%) did not give their gender. The average age of the respondents was 24.46 (*SD* = 5.26), with a range from 18 to 54 years old. Of the respondents, 279 (89.7%) identified themselves as single never married, 14 (4.5%) were divorced, 1 (0.3%) was widowed, and 17 (5.5%) did not identify their marital status. There were 83 (26.7%) Asians, 29 (9.3%) African Americans, 8 (2.6%) Hispanics, 169 (54.3%) Whites, 5 (1.6%) identified themselves as another ethnicity and 17 (5.5%) did not answer this question. The respondents were separated from their partners by an average distance of 2413.03 miles (*SD* = 2672.40), ranging from 90.68 to 10688.06 miles. The distance was calculated by software ZIP Code Distance Wizard between two zip codes, and by the website http://www.mapcrow.info if

participants reported cities instead of zip codes. The average length of their dating relationships was 2 years 2 months (*SD* = 1 year 11 months) with a range from 1 month to 12 years, while the average length of their long distance separation was 1 year 5 months (*SD* = 1 year 5 months), ranging from .5 month to 10 years 1 month.

Measures

The questionnaire used in the study is presented in Appendix B.

Relational Uncertainty

Relational uncertainty was measured by Knobloch and Solomon's (1999) 16-item Relationship Uncertainty Scale. It consists of four dimensions: behavioral norms, which address the acceptable and unacceptable behaviors within the relationship; mutuality, which focuses on the reciprocal feelings about the relationship; definition, which assesses the state of the relationship; and future, which measures views about the relationship outcome. Knobloch and Solomon (1999) found a substantial degree of overlap among the subscales and suggested combining them into a composite measure. Participants were asked to rate their degree of certainty about each item. A sample question is: "How certain are you about whether or not this relationship will end soon?" The responses were measured on a 6-point scale ranging from 1 (completely or almost completely uncertain) to 6 (completely or almost completely certain). All items were coded so that higher values indicate greater degrees of uncertainty about the relationship. Scores were calculated by averaging the scores on all 16 items. The Cronbach's alpha was .96.

Social Support Behaviors

The measurement of social support behaviors was adapted for this study from the Social Support Behaviors Scale (Vaux et al., 1987), which emphasizes the availability of social support from friends and family when the individual needs help. The original scale is composed of 45 items and assesses 5 types of support behaviors: (1) emotional support (11 items, e.g. comfort you if you are upset); (2) socializing (6 items, e.g. visit you or invite you over); (3) practical assistance (8 items, e.g. help you out with a big chore); (4) financial assistance (8 items, e.g. help you out with some necessary purchases); (5) advice/guidance (12 items, e.g. suggest a way that you might do something). Practical assistance and financial assistance items were dropped from this study as stated in literature review. All items on the Vaux et al. (1987) scale that measured emotional support and advice/guidance were included in present study. Of the six socializing items on the original scale, four were modified to adapt for the long distance situation. For example, "go to a movie or concert with me" was changed to "do some entertaining activities with me," "visit me, or invite me over" was changed to "spend some time with me," "have lunch or dinner with me" was changed to "Do something with me just so we can be together," and "call me just to see how I am doing," was changed to "contact me just to see how I am doing." These social support behaviors were measured by asking how likely the partner would be to help the participants out in the specific ways listed on the questionnaire. All responses were rated on a 6-point scale ranging from 1 (definitely not) to 6 (definitely).

The responses of three types of social support were examined with principal axis factoring method with oblimin rotation. Selected items must have primary loadings greater than .50 (Hair,

Anderson, Tatham & Black, 1998), and not cross load at more than .32 on other factors (Osborne & Costello, 2005). The results revealed three factors. However, three items of emotional support, two items of socializing, and one item of advice/guidance were dropped because of either low primary loadings or high cross-loadings. After eliminating the items with low primary loadings and high cross-loadings, factor analysis was re-computed with the remaining items. One item of socializing had a cross-loading of .39, but it was retained to form a stable factor. All other factor loadings exceeded .56 and no cross-loadings were greater than .32. The primary factor loadings of retained items, eigen values for three factors, and the percent of variances each factor accounted for are reported in Table 1.

Scores for each type of support behavior were calculated by averaging the items on the subscale. The Cronbach's alphas for emotional support, socializing, and advice/guidance were .94, .91 and .96 respectively.

Social Support Appraisals

The measurement of social support appraisals was modified for this study from Vaux et al.'s (1986) SS-A scale which addresses the extent to which people feel that they are loved, esteemed, and involved. The original scale consists of 23 items measuring subjective appraisals of support from family (8 items), friends (7 items), and general others (8 items). Because the subscales for family, friends, and general others essentially included the same items, the current study selected the 8 items for family and reworded the statements to reflect perceived support from the romantic partner, such as "my partner cares for me very much," "I'm loved dearly by my

partner." The items were measured on a 6-point scale (1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = slightly agree, 5 = agree, 6 = strongly agree).

Table 1. Factor Analysis of Social Support Behaviors Items

Items	Factor Loading	Eigen Value	Variance Explained (%)
Factor 1: Advice/guidance		14.41	61.48
Tell me the best way to get something done	.94		
Tell me about the available choices and options	.83		
Tell me who to talk to for help	.82		
Help me figure out what was going on	.80		
Give me advice about what to do	.77		
Suggest a way I might do something	.76		
Tell me what to do	.75		
Give me reasons why I should or should not do something	.73		
Suggest how I could find out more about a situation	.73		
Help me decide what to do	.73		
Help me figure out what I want to do	.60		
Factor 2: Emotional Support		1.85	6.84
Be sympathetic if I was upset	.92		
Comfort me if I was upset	.87		
Give me encouragement to do something difficult	.78		
Stick by me in a crunch	.76		
Show affection for me	.67		
Listen if I needed to talk about my feelings	.66		
Show me that they understood how I was feeling	.65		
Not pass judgment on me	.56		
Factor 3: Socializing		1.00	3.11
Spend some time with me	.85		
Do something with me just so we can be together	.83		
Do some entertaining activities with me (e.g. playing games)	.68		
Have a good time with me	.52		

Negatively-worded items were recoded so that higher values indicate a higher degree of social support appraisals. The items on the scale were averaged to obtain a composite mean score. The Cronbach's alpha was .93.

Communication Channels

The use of communication channels was measured by asking how often participants communicate with their partner by each of six different channels: face-to-face, phone call, text message, email, instant messenger (text only), video call/webcam. The responses were rated on an 8-point scale (1 = never, 2 = less frequently than once a month, 3 = once a month, 4 = two or three times a month, 5 = once a week, 6 = several times a week, 7 = daily, 8 = a few times a day or more). The data analysis included the five mediated channels only.

Respondents were asked what communication channels they have access to by simply answering “Yes” or “No”. The percentage of respondents who have access to each channel was calculated to examine the prevalence of those channels. In addition, participants’ communication preference was measured on a 6-point scale by one question “How much you would like or dislike using the channel to communicate with your partner” (1 = dislike very much, 2 = dislike somewhat, 3 = dislike slightly, 4 = like slightly, 5 = like somewhat 6 = like very much). The mean score was computed for each channel.

Relationship Satisfaction

Relationship satisfaction was measured by Hendrick’s (1988) Relationship Assessment Scale (RAS), which taps the specific characteristics of relationships (e.g., love, problems, and expectations). It is composed of 7 items (e.g., to what extent has your relationship met your

original expectations?) that were rated on a 5-point scale ranging from 1 to 5. Negative items on the scale were reverse coded; therefore, higher scores indicated greater relationship satisfaction. The mean score of all items was calculated to form a composite averaged score. The Cronbach's alpha was .89.

Demographic Information

Demographic information included gender, age, marital status, ethnicity, annual household income, length of the relationship, and length of separation. Zip codes for participants and their partners were requested in order to identify the distance separating them. The software ZIP Code Distance Wizard was used to calculate the distance automatically. If the respondents gave city and country instead of zip code, the website http://www.mapcrow.info was used to calculate the distance between two cities.

Method of Analysis

All analyses were computed by SPSS 15.0. Descriptive statistics on all variables were first obtained to get a general sense of data distribution. To check for intercorrelations, Pearson correlations were calculated between the social support variables and between the uses of communication channels. Regression diagnostics were also conducted to ensure assumptions of multiple regression were satisfied.

All partial correlations and the regression analysis controlled for demographic variables: gender, distance, length of the relationship, and length of separation. In addition, each partial correlation that involved a mode of social support behavior and relational uncertainty controlled for all other social support behaviors, the partial correlation between support appraisals and

relational uncertainty controlled for three types of social support behaviors, and each partial correlation that involved use of one of the communication channels controlled for use of the other communication channels. This procedure effectively controlled for the overall level of support or communication frequency, so the unique contribution of each type of social support or communication channel can be identified.

To address hypothesis 1, partial correlations were conducted between relational uncertainty and (a) emotional support, (b) socializing, and (c) advice/guidance, as well as (d) support appraisals.

Hypotheses 2 examined the relationship between social support and relationship satisfaction. A hierarchical multiple regression predicting relationship satisfaction was computed. Demographic variables were entered in the first step, followed by social support behaviors in the second step, and support appraisals in the third step. The same regression analysis was used to address Hypothesis 6 and Research Question 5, which examined how the use of communication channels was related to relationship satisfaction. Specifically, communication channels were entered in the fourth step of the regression prediction relationship satisfaction.

Hypotheses 3-5 and Research Questions1-4 examined how the use of each communication channel is related to support behaviors and support appraisals. Partial correlations were conducted by controlling for all other communication channels, gender, distance, length of the relationship and length of separation.

CHAPTER 4

RESULTS

Preliminary Results

The relationship satisfaction scale ranged from 1 to 5, communication frequency scale ranged from 1 to 8, and all other scales ranged from 1 to 6. In general, the respondents reported that they were satisfied with different aspects of their relationships (*M* = 4.06, *SD* = .78). They also reported relatively high levels of emotional support (*M* = 5.15, *SD* = 1.00), socializing (*M* = 4.93, *SD* = 1.14), and advice/guidance (*M* = 4.83, *SD* = 1.07). They also generally agreed that their partners cared for and loved them very much (*M* = 5.00, *SD* = 1.00). In addition, the participants reported a relatively low level of uncertainly about their relationships (*M* = 2.11, *SD* = 1.03). The average communication frequency was about "several times a week" (coded 6) for phone call (*M* = 6.00, *SD* = 1.84), text messaging (*M* = 5.56, *SD* = 2.37), and instant messaging (*M* = 6.11, *SD* = 1.90), nearly "two or three times a month" (coded 4) for email (*M* = 3.72, *SD* = 2.13), and just under "once a week" (coded 5) for webcam (*M* = 4.85, *SD* = 1.90). Of the 294 respondents who answered demographic questions, the percent of people who had the access to five communication channels was 98.3% (phone call), 91.4% (text messaging), 94.9% (Email), 96.9 (instant messaging), and 81.3% (webcam). This indicated that a very high percentage of participants were able to communicate with their partners via all communication channels. In general, participants liked using all five mediated channels to communicate with their partner (phone call: *M* = 5.60, *SD* = .89; text messaging: *M* = 5.00, *SD* = 1.37; email: *M* = 4.69, *SD* = 1.44; instant messaging: *M* = 5.37, *SD* = 1.41; webcam: *M* = 5.09, *SD* = 1.03).

Pearson correlations were computed between social support variables. The correlation matrix is presented in Table 2. The results indicated that social support behaviors and support appraisals were positively correlated with each other.

Table 2. Pearson Correlations between Social Support Variables

	Socializing	Advice	Appraisals
Emotional Support	.77***	.78***	.85***
Socializing		.67***	.75***
Advice			.69***

Note: The N for all correlations was 311.

*** $p < .001$

Pearson correlations were also conducted between the use of the five mediated communication channels. The correlation matrix is shown in Table 3. The use of phone call was positively correlated with the use of text messaging, instant messaging as well as webcam. In addition, the use of webcam was positively correlated with the use of email and instant messaging.

Table 3. Pearson Correlations between the Use of Communication Channels

	Text messaging	Email	IM	Webcam
Phone call	.18**	.09	.25***	.48***
Text messaging		-.06	.09	.02
Email			.05	.16**
IM				.47***

Note: The N for all correlations was 311.

** $p < .01$; *** $p < .001$

Regression Diagnostics

The assumptions of multiple regression were checked before computing multiple regression. The normality of distributed errors was examined by requesting a quantile-quantile plot of

residuals. The graph suggested a negatively skewed distribution. Therefore, the dependent variable needs to be transformed in order to conduct multiple regression. Tabachnick and Fidell (2007) suggest that when there is substantially negative skewness, transformation method will be NewX = $\log_{10}$ (K - X), where K is equal to the largest score plus 1. Therefore, the score of relationship satisfaction was transformed to the logarithm value so that the skewness could be reduced. After transformation, the distribution of residuals approached to normality. The new value of satisfaction was equal to $\log_{10}$ (6 - satisfaction). Because higher values of the new satisfaction variable indicated lower relationship satisfaction, a negative sign was added to each score so that high scores still indicate greater satisfaction. After transformation, the assumptions of homoscedasticity and linearity were also satisfied. In addition, VIF values were also requested for multiple regression. The VIF values of emotional support and support appraisals were bigger than 4, indicating there might be a problem of non-multicollinearity. These two variables were still retained in the regression equation because they were the variables of interest.

Hypothesis 1

Hypothesis 1 predicted negative relationships between relational uncertainty and four social support variables: (a) emotional support, (b) socializing, (c) advice/guidance, and (d) support appraisals.

Partial correlations were computed to examine Hypothesis 1a, 1b, 1c and 1b. These coefficients are reported in Table 4. Relational uncertainty was negatively correlated with all social support variables. Thus, Hypothesis 1a, 1b, 1c and 1d were all supported.

Table 4. Partial Correlations between Relational Uncertainty and Social Support Variables

	Emotional support	Socializing	Advice/guidance	Support appraisals
Relational uncertainty	-.27***	-.34***	-.15*	-.47***

Note: In correlations between relational uncertainty and each support behavior, controlled variables included all other support behaviors, gender, distance, length of the relationship, and length of separation. In the correlation between relational uncertainty and support appraisals, controlled variables included all support behavior variables, gender, distance, length of the relationship, and length of separation.

* $p < .05$; *** $p < .001$

Hypothesis 2

Hypothesis 2 predicted that social support behaviors and appraisals are positively related to relationship satisfaction. To examine the relationships, a four-step hierarchical multiple regression predicting relationship satisfaction was computed. In the first step, gender, distance, length of relationship, and length of separation were entered. In the second step, three modes of social support behaviors were entered, followed by support appraisals in the third step. Finally, the uses of five communication channels were entered. The standardized beta coefficients and the R^2 change are presented in Table 5.Emotional support, socializing and support appraisals positively predicted relationship satisfaction. Therefore, Hypothesis 2a, 2b and 2d was supported, while Hypothesis 2c was rejected.

Hypothesis 3 and Research Question 1

Hypothesis 3 predicted that emotional support is positively related to the use of both (a) phone call and (b) webcam. Research Question 1 examined how emotional support is related to the use of (a) text messaging, (b) email, and (c) instant messaging.

Partial correlations were conducted by controlling for all other communication channels, gender, distance, length of the relationship, and length of separation. The correlation coefficients are present in Table 6. As predicted, emotional support was positively correlated with the use of both phone call and webcam. Thus, both Hypothesis 3a and Hypothesis 3b were supported. Regarding Research Question 1, emotional support was not significantly related to the use of (a) text messaging, (b) email or (c) instant messaging.

Table 5. Hierarchical Regression on Transformed Relationship Satisfaction

Predictors	Standardized β	ΔR^2
Block 1: Demographic variables		.02
Gender	-.07	
Distance	.02	
Length of relationship	.12	
Length of separation	-.01	
Block 2: Social support Behaviors		.52***
Emotional support	.47***	
Socializing	.24***	
Advice/guidance	.07	
Block 3: Support Appraisals		.09***
Social support appraisals	.62***	
Block 4: Use of communication channels		.06***
Phone call	.24***	
Text messaging	-.09*	
Email	.03	
Instant Messaging	.01	
Webcam	.14**	
R^2	.68	
Adjusted R^2	.67	
F (13,270) = 44.59***		

Note: The standardized beta coefficients are from the block of variables at entry.

* $p < .05$; ** $p < .01$; *** $p < .001$.

Table 6. Partial Correlations between the Use of Communication Channels and Social Support Variables

	Emotional support	Socializing	Advice/guidance	Support Appraisals
Phone call	.41***	.40***	.35***	.47***
Text messaging	.03	.10	.00	.01
Email	.07	.06	.14*	.15*
Instant messaging	.01	-.02	-.06	.02
Webcam	.27***	.31***	.27***	.29***

Note: The controlled variables were all other communication channels, gender, distance, length of the relationship, and length of separation.

* $p < .05$; *** $p < .001$

Hypothesis 4 and Research Question 2

Hypothesis 4 predicted positive relationships between socializing and the use of (a) phone call, (b) instant messaging, and (c) webcam. Research Question 2 examined how socializing is related to the use of (a) text messaging and (b) email.

Partial correlations were conducted to examine the relationships between socializing and the use of each communication channel, controlling for all other communication channels, gender, distance, length of the relationship, and length of separation. The partial correlations are listed in Table 6. Both the use of phone call and the use of webcam were positively related to socializing. Therefore, Hypothesis 4a and 4c were supported. However, no significant correlation was found between the use of instant messaging and socializing. Hypothesis 4b was rejected. Regarding Research Question 2, no significant correlations were found between socializing and the use of (a) text messaging or (b) email.

Hypothesis 5 and Research Question 3

Hypothesis 5 predicted that advice/guidance is positively related to the use of (a) text messaging, (b) email and (c) instant messaging. Research Question 3 examined how advice/guidance is related to the use of phone call and webcam.

Partial correlations were computed to assess the relationships between the use of each communication channel and advice/guidance, controlling for all other communication channels, gender, distance, length of the relationship, and length of separation. The correlation coefficients are reported in Table 6. The use of email was positively related to advice/guidance. Thus, Hypothesis 5b was supported. However, advice/guidance was not significantly correlated with either the use of text messaging or the use of instant messaging. Thus, Hypothesis 5a and 5c were rejected. Regarding Research Question 3, both the use of (a) phone call and (b) webcam were found to be positively related to advice/guidance.

Research Question 4

Research Question 4 assessed the relationships between support appraisals and the use of different communication channels. Partial correlations were also computed by controlling for all other communication channels, gender, distance, length of the relationship, and length of separation. The coefficients are presented in Table 6.

The use of phone call, email, and webcam were positively related to support appraisals. However, the use of text messaging and instant messaging were unrelated to support appraisals.

Hypothesis 6 and Research Question 5

Hypothesis 6 predicted positive relationships between relationship satisfaction and the use of (a) phone call and (b) webcam. Research Question 5 examined how relationship satisfaction is related to the use of text messaging, email and instant messaging. As explained above, this hypothesis and research question were addressed by the regression equation predicting relationship satisfaction (see Table 5). Specifically, use of the five communication channels were entered in the fourth step of the equation.

Table 5 shows that the frequency of phone call and webcam use positively predicted relationship satisfaction. Hypothesis 6a and Hypothesis 6b were both supported. Regarding Research Question 5, the use of text messaging was negatively related to relationship satisfaction, opposite to phone and webcam use. However, neither the use of email or instant messaging was a significant predictor of relationship satisfaction.

CHAPTER 5
DISCUSSION

The present study assessed how social support variables and communication channel use are related to relationship satisfaction in LDRRs. In addition, how social support variables are correlated to relational uncertainty and communication channels were examined. This research specified the unique contribution of each social support variable and communication channel use to relationship characteristics and maintenance variables, and contributed to knowledge about the distinct roles of social support as well as mediated channels in maintaining LDRRs.

Social Support and Relational Uncertainty

The results revealed that all of the four social support variables, emotional support, socializing, advice/guidance and support appraisals, were negatively correlated with relational uncertainty.

The negative correlations of relational uncertainty with four social support variables may be explained by its correlations with relational involvement, intimacy and trust. Higher support availability and appraisals implies greater partners' relationship involvement, higher level of reliability and trust, and higher level of intimacy perceived by individuals. Lack of confidence in relationship involvement has been used to define relational uncertainty (Knobloch & Solomon, 1999). In other words, the more confident people feel about their partner's relationship involvement, the less relational uncertainty they feel. In addition, it has been demonstrated that decreased relational uncertainty is linked to increased intimacy (Solomon & Knobloch, 2001) and increased trust (Dainton & Aylor, 2001). Therefore, these demonstrated relationships may

contribute to the correlations of relational uncertainty with emotional support, socializing, advice/guidance, and support appraisals.

In addition, the correlations may be explained by the level of stress. It seems individuals who feel supported by their partners are likely to have a lower stress level because of the buffering effect of social support. As stress has been considered a source of relationship uncertainty, it seems that the more support from partners, the less uncertainty people feel about the relationship.

Communication Channel Use and Social Support

The results showed that the frequency of both phone call and webcam use were positively related to all social support variables. Use of email was positively correlated with advice/guidance and support appraisals, but text messaging and instant messaging were not related to any social support variables.

The findings provided some preliminary evidence that the association between channel use and social support in regular relationships could be generalized to long distance romantic relationships. The results supported Leung and Lee's (2005) findings on the positive correlation of phone use with three dimensions of social support, including emotional, informational and social interaction. It appears that phone call is an appropriate channel for all modes of social support. However, the findings in this study regarding the relationships between the three CMC channels and social support were not consistent with prior literature, but methodological differences make comparisons difficult. In the same study, Leung and Lee (2005) did not find any relationship between computer use and different dimensions of social support. In contrast,

Swickert et al. (2002) found a marginal positive relationship between computer use and social support. Although Morgan and Cotten (2003) did not examine the correlation between channel use and social support, they did find that the increased use of email and instant messaging was associated with decreased depressive symptoms, which have been demonstrated to be related to increased support. The inconsistency between the findings of the present study and previous research may be caused by the different criteria for defining and measuring social support. In addition, as prior studies typically considered CMC as one channel, the distinct functions of the different channels were not differentiated. Therefore, the earlier results may not accurately represent the relationship between CMC channel use and social support.

The results of the present study confirmed that it is necessary to differentiate text-based, audio-based and video-based communication channels because of their unique characteristics. Overall, it appeared that using audio-based and video-based communication channels helped deliver care, guidance and love to one's partner. The findings also support the idea that emotional support needs to be communicated through nonverbal cues, such as voice, expressions and gesture (Weber, Johnson, & Corrigan, 2004), and that voice-based communication is best suited for companionship (Xie, 2008).

These results can be explained by media richness theory (Daft & Lengel, 1986) and social presence theory (Short et al., 1976). Generally speaking, telephone and webcam use exceed text messaging, email and instant messaging in facilitating immediate feedback, multiple cues, variety in language usage, and supporting a personal focus. Support messages may be more clear and detailed via phone call or video communication. Moreover, emotional support usually

involves multiple elements, and is clearly not expressed by text only. Also, the sense of being together should be stronger in a richer medium. Hence, long distance couples are likely to have better communication quality via phone call and webcam than via text-based communication channels, which may influence their perceptions of social support. Another explanation of the results could be that phone and webcam use are more synchronous than the use of other channels. Phone call and webcam use require users to be focused and listen to the other. However, although interactivity exists in text messaging and instant messaging, individuals may feel ignored because a partner can send messages to many others at a time or may not respond immediately.

The findings of the present study did not support previous findings about the positive relationship between instant messaging use and relationship maintenance (e.g., Hu et al., 2004; Valkenburg & Peter, 2007). The possible explanation could be some channels may be appropriate for romantic relationships, while others may be appropriate for other types of relationships. For example, Valkengurg and Peter (2007) suggested that instant messaging was mostly used to communicate with existing friends. In addition, Kim et al.'s (2007) study found that mobile phones tend to be used in reinforcing strong social ties, and text-based CMC media tend to be used in expanding relationships with weak ties. It is possible that because the participants in the present study were involved in romantic relationships, they did not perceive text messaging and instant messaging as important as other channels in relationship maintenance. Therefore, increased use of text messaging and instant messaging was not correlated with increased social support.

Email was positively related to advice/guidance and support appraisals. Although email is an asynchronous channel, it does provide space for detail information and allows people to respond at their own pace. It is particularly appropriate when a problem is complex because people have time to think about the possible solutions before replying to the email. As Wicklund and Vandekerckhove (2000) argued, asynchronous interaction boosts cognitive processes, such as thinking about and remembering the other. Therefore, it is possible that the more individuals use email, the more advice/guidance support they perceive, and thus they feel more cared for by the other, leading to a higher degree of support appraisals.

Channel preference may also explain the correlations between communication channel use and social support. Research found that individuals' preference for telephone and email were related to perceived media richness (D'Ambra et al., 1998). The findings suggested that those who like immediate interaction and communication via multiple cues may prefer using telephone and webcam. Individuals may also prefer one channel over the other depending on whether they want to deliver an ambiguous message or a clear one (O'Sullivan, 2000). Therefore, their preference for channel use may influence the communication quality, and thus may be related to their perception of social support as well.

Predictors of Relationship Satisfaction

The results of the present study showed that relationship satisfaction was positively predicted by support appraisals, phone use and webcam use, and was negatively predicted by text message use.

It is not surprising that distance was not a significant factor in relationship satisfaction. In LDRRs, those who are far from each other do not necessarily have a less satisfactory relationship than those who are relatively close to each other, because all couples separated by distance lack face-to-face interaction and may have a similar experience due to communication restrictions.

Of the social support behaviors, emotional support and socializing positively predicted relationship satisfaction. The results confirm Cramer's (2004a, 2004b) studies that found a relationship between emotional support and relationship satisfaction. However, advice/guidance was not a significant predictor. The possible explanation is that distinct modes of social support have different mechanism of functions and differentially impact outcomes (Vaux et al., 1987). For example, emotional support and socializing function as an aid to emotion-focused coping, or have direct impact on well-being, whereas advice/guidance may facilitate problem-focused coping. In addition, support behaviors differentially impact outcomes. Emotional support and socializing are more suitable to mood management, and advice/guidance may be best for performance improvement. The findings of the present study suggested that relationship satisfaction is more likely to be related to emotional issues or personal mood, rather than practical problems or performance.

Support appraisals was also a significant predictor of relationship satisfaction. In other words, regardless of modes of support behavior, the more the individuals felt cared for and loved, the more satisfied they were with their relationships. The results are consistent with Kane and her colleague's (2007) findings that people were less satisfied when they perceived their partners to

be less effective caregivers. It appears that, while maintaining a LDRR, learning how to deliver support effectively is as important as supporting one's partner.

Finally, this study assessed the association between communication channel use and relationship satisfaction. The results showed that increased phone call and webcam use predicted increased satisfaction, whereas increased text messaging predicted decreased satisfaction. In Dainton and Aylor's (2002) study, a positive relationship between telephone and satisfaction was also found. It seemed that the phone call was still the essential communication channel for long distance couples, and frequent contact via voice calls was helpful to maintain a satisfied relationship. However, the same study found no relationship between internet use and satisfaction. A potential reason given was that internet use included all internet-based activities and it was not clear which aspects of internet use might contribute to relationship satisfaction. A significance aspect of the present study is that several CMC channels were differentiated and the contribution of each channel use to relationship satisfaction was assessed separately. As the results suggested, webcam use was as important as phone calls for a satisfied relationship. Through webcam, individuals can talk to their partners "face-to-face," thus perceiving a high degree of social presence. This research revealed that using webcam may provide a better communication quality than other mediated channels. Previous research has demonstrated that the use of gaze in video-based communication improved mutual understanding (Boyle, Anderson & Newlands, 1994; Monk & Gale, 2002). Their findings implied that communicating via webcam helps the couples to deliver and receive messages and understand each other.

It was interesting to find in the present study that text messaging was negatively related to relationship satisfaction. A potential explanation could be that messages delivered via texting are short and vague. Therefore, the communication between individuals may not fulfill their expectations, leading to unsatisfied communication outcomes. In addition, the individuals may not choose text messaging as a way to seek and receive social support.

Limitations and Suggestions for Future Research

The present study assessed the role of different communication channels in maintaining LDRRs. However, there were still some limitations in data measurement, sampling, study design, and the selection of variables.

First, in the present study, the amount of communication time was used to measure the frequency of channel use. However, due to the different characteristics of channels, different units of measurement may be appropriate for each channel. For example, the length of time (hours) may best measure phone call, instant messaging and webcam use. The number of messages may be better for text messaging and email. Although applying different measures could lead to difficulties in comparing the use of various channels, it may be better to understand the substantial meanings of channel use.

Second, the present study only measured partner's support. However, support from family members and friends also is important to individuals. It is possible that people who perceive less support from their partners do not have a less satisfied relationship, because their family and friends' comfort, companionship and advice also helps them cope with difficult situations.

Future research on partner support should also consider support from individuals' larger social network.

Third, the survey was conducted online. Although this method allowed for the recruitment of a diverse sample of couples, they are not representative of all couples in long distance relationships. Since the recruiting messages were posted on online forums, it is likely that the participants are more active on the internet and more skilled in new technology. Compared to the general population, the participants are likely to use CMC channels more frequently. Further research could compare active internet users and non-active internet users to examine whether there is a difference in social support and relationship satisfaction. It is possible that active internet users and non-active internet users have different patterns of communication channel use. While phone call and webcam seem to reinforce relationship maintenance, other channels may be harmful to relationship quality (e.g. the negative relationship between text messaging and relationship satisfaction found in the present study), and these patterns may differ depending on people's familiarity and comfort with new technologies.

Fourth, the present study measured individuals' perceptions rather than the couples' responses. Therefore, it was not able to compare perceived support from the two parties in a relationship. Equity theory predicts that people are content in fair relationships and distressed in inequitable relationships (Canary & Stafford, 1994). It suggests that when an individual perceives a lower degree of social support from his or her partner, the couple may be involved in an inequitable relationship. Therefore, the couple may have different views of the relationship quality. Future research in this area should obtain the perceptions of both relational partners.

Fifth, this study examined the correlation between channel use and social support, but did not consider the content of support messages provided via the different channels. People may choose to communicate via a certain channel based on the content of the messages they want to send. For example, although people reported a high frequency of text messaging, they may not actually use text messaging as a channel to seek or receive social support. To understand channel use and social support better, further research should examine the amount and content of support people receive from each communication channel. In addition, while phone call, the traditional channel, seems essential in long distance relationships, it would be interesting to explore the use of new technologies, and its correlations with social support, in geographically close relationships.

Sixth, the present study was cross-sectional. Therefore, the causal order of the relationships observed cannot be determined. For example, couples who are more satisfied may be more likely to choose certain channels of communication, rather than channel use affecting satisfaction. It is also possible that greater relationship satisfaction leads to greater support. Future research could include interventions in the study, such as teaching couples to be more supportive or to use audio and video-based communication channels more frequently. Therefore, it would be possible to determine whether the interventions help to increase relationship satisfaction. A longitudinal study could also be conducted in the future, to examine the same group of participants over a long period.

Finally, some information that might be important was not examined in this study. For example, the reason why people were separated was not asked. It is possible that individuals

separated because of military service (for example) may differ from those separated because of study or a new job in their use of channels and perceptions of their relationships. In addition, the present study did not measure whether respondents were the ones who had moved away or the ones who had stayed behind, or whether both partners had moved. It seems likely that people who had relocated would be more likely to seek social support than those who did not move. The study also did not ask for the gender of the relationship partner, which could play a role in the provision of social support. Moreover, further research should include intimacy and trust in order to gain a better understanding of the function of social support and communication channel use in LDRRs.

Conclusion

The present study examined the distinct contributions of each communication channels to social support and relationship outcomes in LDRRs. Unlike previous research in the LDRR literature, this study demonstrated that studying the internet as a whole may not accurately show how the use of CMC is related to relationship variables. The most significant contribution of the study was the findings of a prominent role for phone and webcam in maintaining LDRRs. The results suggested that phone and webcam use were related to all social support variables and contributed more than other channels to relationship satisfaction. It appeared that the participants perceived hearing and watching their partner as more important than text-based communication in maintaining LDRRs. While more and more people have access to the internet and new communication technologies, how to best utilize audio and video to communicate with the other seems essential to long distance couples.

All of four support variables were correlated with relational uncertainty. The findings indicated that being a supportive partner may help the other one feel less stressed and more certain about the relationship. Emotional support and socializing was also related to relationship satisfaction. The results suggested that in relationship maintenance, emotion-focused coping strategies may best help individuals to achieve a satisfied relationship.

Support appraisals was found to significantly predict relationship satisfaction. The results implied the perceived effectiveness of social support is as important as the availability of support. In other words, individuals not only should support their partners, but also need to think about how to make their partners feel supported, in order to reduce relationship uncertainty and enhance relationship satisfaction. For example, they may communicate via audio or video to exhibit their care and love.

In sum, audio and video-based communication channels appeared to improve social support and enhance relationship satisfaction. Emotional support, socializing and support appraisals contributed to relationship satisfaction as well. The present study has contributed to the LDRR literature by differentiating communication channels, especially CMC channels, and relating them to social support and relationship outcomes.

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Appendix A

Recruiting Message

This is Lijuan Yin. I'm a master student in the Department of Communication at Georgia State University. Currently I'm conducting a survey on relationship maintenance among long distance romantic relationship partners. If you are older than 18 years old, involved in a dating relationship which was initiated offline, and currently separated with your partner by distance, you are welcome to participate in the study. Your responses will be confidential and will be only used for research purpose. It will take you fifteen to twenty minutes to complete the survey.

Please go to the site below to link to the survey. Feel free to contact me at lyin4@student.gsu.edu. Thank you in advance for your participation!

Appendix B

Questionnaire

I. The following questions ask about the quality of your long-distance romantic relationship. Please rate how you feel about the following aspects of your relationship.

1. How well does your partner meet your needs?
Poorly 1 2 3 4 5 Extremely well

2. In general, how satisfied are you with your needs?
Unsatisfied 1 2 3 4 5 Extremely satisfied

3. How good is your relationship compared to most?
Poor 1 2 3 4 5 Excellent

4. How often do you wish you hadn't gotten into this relationship?
Never 1 2 3 4 5 Very Often

5. To what extent has your relationship met your original expectations?
Hardly at all 1 2 3 4 5 Completely

6. How much do you love your partner?
Not much 1 2 3 4 5 Very much

7. How many problems are there in your relationships?
Not much 1 2 3 4 5 Very many

II. We would like you to rate how certain you are about the relationship itself at this time. Please note, we are not asking you to rate how you understand the relationship, but rather how CERTAIN you are about whatever feelings you have about the relationship.

1 = completely or almost completely uncertain
2 = mostly uncertain
3 = slightly more uncertain than certain
4 = slightly more certain than uncertain
5 = mostly certain
6 = completely or almost completely certain

How certain are you about…

8. the definition of this relationship? 1 2 3 4 5 6

9. whether or not you and your partner fell the same way about each other?	1	2	3	4	5	6
10. whether or not you and your partner will stay together?	1	2	3	4	5	6
11. how you and your partner would describe this relationship?	1	2	3	4	5	6
12. the future of the relationship?	1	2	3	4	5	6
13. what you can or cannot say to each other in this relationship?	1	2	3	4	5	6
14. the boundaries for appropriate and/or inappropriate behavior in this relationship?	1	2	3	4	5	6
15. whether or not this relationship will end soon?	1	2	3	4	5	6
16. how you and your partner view this relationship?	1	2	3	4	5	6
17. the state of the relationship at this time?	1	2	3	4	5	6
18. whether or not your partner likes you as much as you like him or her?	1	2	3	4	5	6
19. the current status of this relationship?	1	2	3	4	5	6
20. whether or not this is a romantic or platonic relationship?	1	2	3	4	5	6
21. the norms for this relationship?	1	2	3	4	5	6
22. where this relationship is going?	1	2	3	4	5	6
23. how you can or cannot behave around your partner?	1	2	3	4	5	6

III. People help each other out in a lot of different ways. Suppose you had some kind of problem (for example, you were upset about something, or needed some advice or guidance). How likely would your long-distance partner be to help you out in each of specific ways listed below?

1 = would definitely NOT do this
2 = would probably NOT do this
3 = would possibly NOT do this
4 = would possibly do this
5 = would probably do this
6 = would definitely do this

24. Suggest doing something, just to take my mind off my problems	1	2	3	4	5	6
25. Spend some time with me	1	2	3	4	5	6
26. Comfort me if I was upset	1	2	3	4	5	6
27. Do something with me just so we can be together	1	2	3	4	5	6
28. Joke around or suggest doing something to cheer me up	1	2	3	4	5	6
29. Do some entertaining activities with me (e.g. playing games)	1	2	3	4	5	6
30. Suggest how I could find out more about a situation	1	2	3	4	5	6
31. Listen if I needed to talk about my feelings	1	2	3	4	5	6
32. Have a good time with me	1	2	3	4	5	6

33. Suggest a way I might do something	1	2	3	4	5	6
34. Give me encouragement to do something difficult	1	2	3	4	5	6
35. Give me advice about what to do	1	2	3	4	5	6
36. Chat with me	1	2	3	4	5	6
37. Help me figure out what I want to do	1	2	3	4	5	6
38. Show me that they understood how I was feeling	1	2	3	4	5	6
39. Help me decide what to do	1	2	3	4	5	6
40. Give me a hug, or otherwise show me I was cared about	1	2	3	4	5	6
41. Contact me just to see how I am doing	1	2	3	4	5	6
42. Help me figure out what was going on	1	2	3	4	5	6
43. NOT pass judgment on me	1	2	3	4	5	6
44. Tell me who to talk to for help	1	2	3	4	5	6
45. Be sympathetic if I was upset	1	2	3	4	5	6
46. Stick by me in a crunch	1	2	3	4	5	6
47. Tell me about the available choices and options	1	2	3	4	5	6
48. Give me reasons why I should or should not do something	1	2	3	4	5	6
49. Show affection for me	1	2	3	4	5	6
50. Tell me the best way to get something done	1	2	3	4	5	6
51. Tell me what to do	1	2	3	4	5	6
52. Help me think about a problem	1	2	3	4	5	6

IV. The following questions ask about your feelings about your partner. Please indicate how much you agree or disagree with each statement.

1 = strongly disagree
2 = disagree
3 = slightly disagree
4 = slightly agree
5 = agree
6 = strongly agree

53. My partner cares for me very much	1	2	3	4	5	6
54. My partner holds me in high esteem	1	2	3	4	5	6
55. I am really admired by my partner	1	2	3	4	5	6
56. I am loved dearly by my partner	1	2	3	4	5	6
57. My partner relies on me	1	2	3	4	5	6
58. I can’t rely on my partner for support	1	2	3	4	5	6
59. My partner respects me	1	2	3	4	5	6
60. I don’t feel close to my partner	1	2	3	4	5	6

V. Now please tell us approximately how often you communicate with your long-distance partner

via the following communication channels.

1 = never
2 = less frequently than once a month
3 = once a month
4 = two or three times a month
5 = once a week
6 = several times a week
7 = daily (every day)
8 = a few times a day or more

61. Face-to-face	1	2	3	4	5	6	7	8
62. Telephone call (including landline phone, cell phone and internet phone)	1	2	3	4	5	6	7	8
63. Text message	1	2	3	4	5	6	7	8
64. Email	1	2	3	4	5	6	7	8
65. Instant messenger (text only; including Windows Live messenger, Yahoo messenger, and etc.)	1	2	3	4	5	6	7	8
66. Video call/webcam (usually associated with instant messenger such as Windows Live messenger, Yahoo messenger, and etc.)	1	2	3	4	5	6	7	8

VI. Finally please tell us about yourself.

67. Gender: (1) male (2) female
68. Your Age: _____
69. Marital Status:
(1) Single, never married (2) Married (3) Separated (4) Divorced (5) Widowed
70. Ethnicity:
(1) Asian/Pacific Islander (4) Native American
(2) Black/African American (5) White/Caucasian
(3) Hispanic/Latino (6) Other _____(Please specify)
71. Annual Household Income:
(1) $10,000 or less
(2) $10,001 to $25,000
(3) $25,001 to $35,000
(4) $35,001 to $50,000
(5) $50,001 to $75,000
(6) More than $75,000

72. Do you live in the United States? Yes No
If yes, then your zip code is _____
If no, then please tell us your city_____ and country_____
73. Does your partner live in the United States?
If yes, then his/her zip code is _____
If no, then please tell us his/her city_____ and country_____
74. How long have you been romantically involved with your partner? _____Years _____Months
75. How long have you and your partner lived apart (long-distance)? ____Years ____Months
76. Do you have the access to the following communication methods?
(1) Telephone (either landline phone, cell phone or internet phone) Yes No
(2) Text message Yes No
(3) Email Yes No
(4) Instant Messenger Yes No
(5) Webcam Yes No
77. If you had the access to all of the following communication channels, please tell us how much you would like or dislike using the channel to communicate with your partner.

1 = dislike very much
2 = dislike somewhat
3 = dislike slightly
4 = like slightly
5 = like somewhat
6 = like very much

(1) Telephone (either landline phone, cell phone or internet phone)	1	2	3	4	5	6
(2) Text message	1	2	3	4	5	6
(3) Email	1	2	3	4	5	6
(4) Instant Messenger	1	2	3	4	5	6
(5) Webcam	1	2	3	4	5	6