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FACE TO FACE VERSUS COMPUTER-MEDIATED COMMUNICATION: COUPLES SATISFACTION AND EXPERIENCE ACROSS CONDITIONS

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Abstract of Thesis

FACE TO FACE VERSUS COMPUTER-MEDIATED COMMUNICATION: COUPLES SATISFACTION AND EXPERIENCE ACROSS CONDITIONS

This mixed method study examined differences in how face to face (FtF) and computer-mediated communication (CMC) were experienced for individuals communicating with their romantic partner. Forty-four individuals (22 couples) engaged in discussions in both FtF and CMC conditions in a laboratory environment, measuring communication satisfaction as an indicator of experience. Eight couples were also randomly selected to participate in interviews and their reports were used to add depth to the analyses and further inform the findings. Participants reported similar levels of satisfaction across communication conditions, which extends previous literature suggesting that users are able to adapt to text-based channels of communication to a degree that naturalness similar to that of FtF is achieved. Analyses also indicated a positive relationship between attitudes towards CMC use and history of CMC use. This relationship is discussed in terms of symbolic interactionism theory. Communication satisfaction item analysis and interview reports suggest that couples have varying attitudes and uses for CMC. Some couples report a hesitancy to use CMC given the lack of non-verbal cues and risk of miscommunication while other couples report that CMC is helpful in facilitating de-escalation of conflict and allowing partners to communicate more effectively around sensitive issues.

KEYWORDS: Computer-mediated communication, Communication technology, Couples, Interpersonal communication, Communication satisfaction

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April 20, 2010

FACE TO FACE VERSUS COMPUTER-MEDIATED COMMUNICATION:
COUPLES SATISFACTION AND EXPERIENCE ACROSS CONDITIONS

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The Graduate School

University of Kentucky

2010

FACE TO FACE VERSUS COMPUTER-MEDIATED COMMUNICATION:
COUPLES SATISFACTION AND EXPERIENCE ACROSS CONDITIONS

THESIS

A thesis submitted in partial fulfillment of the
requirements for the degree of Master of Science in the
College of Agriculture
at the University of Kentucky

By

Martha Perry

Lexington, Kentucky

Director: Dr. Ronald Werner-Wilson, Professor of Family Studies

Lexington, Kentucky

2010

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To those who, despite all odds, continue to learn, grow and love. May you know the strength that you inspire in others.

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Chapter 1

Introduction

The use of the internet and technology has become commonplace among most Americans, increasing in use over the past few decades. One report, based on nationwide survey results released by the Pew Internet and American Life project estimates that the internet is being used by a majority of the population with 73% of American adults going online and 78% of American adults owning cell phones (Jones, 2009). This report also indicates that 93% of the teen population uses the internet. This text-based form of communication is referred to as computer-mediated communication (CMC) and for this discussion will include online based instant messaging (IM), or “chatting”, and e-mail. Short Messaging Service or text messaging (SMS’s) is also growing in usage, but research on this mode is still limited. There are many uses for the internet, one of which is interpersonal communication. While younger generations are more likely to report using the internet for socializing through social networks or other channels than older generations, older adults still report that one of their main uses for the internet is e-mailing (Jones, 2009). This indicates that using the internet for interpersonal communication is one of the main reasons for internet use across generations. Using CMC for the purposes of interpersonal communication is a common tool for those who live a long distance away from one another, however multiple studies also show that CMC is used to communicate with those who live close by or even among family members who live in the same household (Stafford, Kline, & Dimmick, 1999; Wellman, 2008).

Past and current CMC studies have studied interpersonal communication among friends, co-workers, classmates or strangers. However, it is rare to find a study that gives mention to how romantic partners use or experience this form of communication, and it is even less common to include couples in an experiment. A later report released by the Pew Internet and American Life Project from 2008 (Wellman, et al.) found that romantic or married couples tend to use their cell phone or a landline for the majority of day to day communication but also use e-mail, IM or SMSs for communication when they are separated.. CMC was being used to just say hello or chat, to coordinate schedules and routines, to plan future events or to discuss important matters. This study gives some indication of how couples are *using* CMC but does not answer the question of how couples are *experiencing* CMC or how it may be different from face to face (FtF) communication. While these findings indicate that the number of couples using CMC for these purposes is small, this number is likely to increase in the coming years as the number of adults who own cell phones and have internet at home increases and adolescents who have the highest rates of CMC use age into young adulthood.

Given the text-based format of this communication channel, many theories have been developed on how this unique channel may influence the experience of interpersonal communication. Empirically based experiments have also been conducted assessing how this text-based type of communication differs from that of face-to-face communication. The literature includes a number of theories that discuss the drawbacks and shortcomings of CMC. This literature concludes that CMC is inferior in comparison to FtF communication because of the reduced number of cues available to users. More recent theories of CMC discuss adaptation to CMC; with increased use and familiarity,

users are able to overcome the lack of cues and other drawbacks to the channel and find use of CMC advantageous for interpersonal communication.

Purpose

The current literature encourages the ongoing exploration of how CMC is being used, and how one's experience of CMC may differ from that of FtF communication. There is also a need to address how those in committed relationships experience CMC. This study will both extend the literature on how users experience CMC versus FtF communication as well as help begin the discussion on how individuals communicating with a romantic partner experience CMC versus FtF communication.

The following discussion will include relevant literature on the development of CMC theories and will integrate relevant empirical findings. While CMC theories will inform the examination of the nature of a text-based channel, the integration of theory that examines interpersonal interaction more generally will also be useful in informing this discussion. Symbolic interactionism theory, therefore, will be used to add dimension to the understanding of how perceptions and interactions with others may influence experience of CMC.

Chapter 2

Relevant Literature: CMC as Inferior

Reduced Cues

Much of the early research on CMC focuses on the nature of the channel, and implications these characteristics have for communication. CMC is text-based, and therefore non-verbal communication is in large part eliminated. CMC, when used in an asynchronous format (e-mail) does not allow for immediate feedback, which in turn hinders a sender's ability to correct a message if a receiver's interpretation is inaccurate. Media richness theory states that CMC is a leaner environment for communication than FtF (Daft & Lengel, 1986). When feedback is delayed and users cannot rely on non-verbal cues, ambiguity is increased, thereby creating opportunity for miscommunication.

Media naturalness theory (Kock, 2004; Kock, et al., 2008), originally developed to defend the CMC as inferior argument, is an extension on media richness theory (Daft & Lengel, 1986). Media richness theory argued that lack of cues in CMC would hinder communication. Media naturalness theory continues to explain this phenomenon by stating that humans are accustomed to and most comfortable in FtF. This theory is informed by theories of Darwinian evolution, stating that humans have developed interpersonal communication skills intended to be used in a face-to-face context (Kock, 2004; Kock, et al., 2008). They argue that anything outside of this is unnatural. The degree of "naturalness" is determined by comparing that channel to the most natural channel of FtF. Kock and colleagues predicted that the unnaturalness of CMC would require higher amounts of mental effort, that communication would be ambiguous and

that users would experience dullness when using the channel to solve complex tasks (2008). Based on this theory, those using CMC would struggle with interpretation of messages, feel less engaged during conversation and have lower levels of communication satisfaction.

CMC varies by degree of synchronization with synchronous CMC including channels such as online chatting and asynchronous channels including e-mail. While some may argue that synchronous channels would be more advantageous in that they allow for quicker feedback, others argue that asynchronous channels are more beneficial to users in that they allow for more reflection and reconsideration of one's message before sending (Kruger, Epley, Parker, & Ng, 2005). The vast majority of CMC models, theories and empirical research support the first theory of the lack of synchronization being a hindrance to communication. It may also be the case that users would prefer different levels of synchronization based upon the content of the message and the context in which it is being sent.

The channel of communication may have implications for not only how accurately users can interpret content of a message but also how accurately users can interpret emotions within a message (Byron, 2008). In a theoretical model of e-mail use Byron states that the lack on non-verbal cues makes accurate perception of emotions difficult and receivers may attribute more neutral or negative meanings to messages than senders intended. Friedman and Currall (2003) continue the discussion with a model that details how e-mail use may encourage the escalation of conflict in a work environment. They speculate that the structure of e-mail diminishes feedback, provides minimal social cues, increases "piling on" or "argument bundling" in that users have the ability to create

lengthy messages, and that the text based nature of e-mail allows for excessive attention to or rumination of the message by both senders and receivers. All of these factors are argued to contribute to misunderstandings and frustration, which can lead to escalated conflict.

Multiple studies have also found that the resulting level of communication satisfaction is also lower when using CMC versus FtF. In a study assessing for levels of performance and satisfaction across three different communication environments (instant messaging, video conferencing, and face to face), it was found that the mode of communication being used neither helped nor hindered performance, however those using the CMC mode reported the lowest levels of satisfaction (Simon, 2006). Similar findings were reported in a study by Mallen (2003) that compared levels of satisfaction after participants completed task assignments in FtF and CMC. It was found that the CMC environment was rated lower in satisfaction, closeness and depth of processing.

One study assessed stranger dyads for levels of confidence in communicating messages and accuracy in interpreting messages across CMC, voice only and FtF environments (Kruger, et al., 2005). Participants were instructed to deliver scripted messages with specific characteristics (sarcasm, sadness, seriousness, anger) and rate their level of confidence in communicating these messages as well as measuring the receiver's degree of accuracy in interpreting the message. Results indicated that dyads were more accurate in communication in the voice or FtF conditions.

Summary

The reduction of cues such as tone and facial expression and the lack of synchronization in message transmission impair a user's ability to accurately interpret message meaning or perceive emotion. The result is often lower performance on communication tasks and lower ratings of satisfaction with CMC.

Relevant Literature: Nature of Cues

The argument is clear that CMC is a channel that lacks non-verbal cues that exist in FtF communication such as facial expression and tone of voice. The assumption is that these cues are beneficial in that they assist in meaning making of a message beyond the actual words being uttered. Furthermore, when these cues are absent, miscommunication will be the result. This assumption, however, may not always be valid. In *Pragmatics of Human Communication*, axioms of communication are discussed, one of which states that all messages have report and command functions (Watzlawick, et al., 1967). The report (or content) of a message is declarative, conveying information, while the command is an implied message based on expectations, defined by the relationship between those communicating.

It is not uncommon for report and command messages to be contradictory. The content is the actual words or language used. The command is present in the meta-communication, such as tone of voice, facial expression, body language, etc. Couples often complain of getting mixed messages from their partner, for example the statement that a tone of voice implied more than the actual words being spoken. Segal made this

point in a discussion on couple's therapy stating that couple's may lose sight of the report if attention is being focused on the command (Segal, 1991). A command is meaningful and exists as a reflection of the relationship between those who are interacting, but when content is being overshadowed by command cues such as body language or facial expression, miscommunication may ensue.

In the context of CMC, the report would refer to the text-based communication being transmitted. However, the implied meaning of the command that exists in social cues would be absent. This may actually be advantageous for communication in that it would help users focus on content without the distraction of command messages. The case can be made that the presence of non-verbal cues does not always guarantee perception that is more accurate or satisfying communication. Their absence in CMC, while potentially explaining some degree of difference across communication environments, does not necessarily dictate that FtF interaction will be more satisfying or that CMC, lacking these cues, will be less satisfying. The next section will discuss how users can actually learn to adapt to this channel, and how cues may be filtered back, influencing one's experience of the channel.

Relevant Literature: CMC as Adequate, Adaptation

While past studies and models have been helpful to begin the discussion on CMC, later developed models and research have expanded the understanding of this mode of communication. Preliminary models failed to take into account the possibility that a user may be able to adapt to a new channel of communication. These studies also failed to explore how one's degree of familiarity with CMC or the nature of the relationship with

those with whom you communicate may influence one's ability to use the channel successfully, potentially influencing communication satisfaction.

Familiarity with and Adaptation to CMC

Media naturalness theory suggests that CMC is less natural than FtF and than less natural channels will result in communication that is lower in satisfaction and higher in degrees of ambiguity (Kock, 2004; Kock, et al., 2008). Kock and colleagues later discuss, however, that users may be able to adapt to channels of communication to a degree that make them similar to FtF in degree of naturalness.

Some authors previously noted for their research in CMC have commented on the possibility of the familiarity with CMC having an impact on their findings. For example, Spitzberg (2006) suggested, "the competence with which any given person utilizes these new technologies is likely to affect whether this person views the technology as utopian or dystopian." Kruger and colleagues (2005) postulated that participants who are unfamiliar with e-mail might have been unaware of its limitations, leading to inaccurate perceptions of overconfidence. Mallen and colleagues (2003) also concluded that "practice makes perfect," stating that research participants in the IM communication group who reported e-mailing with more partners on a daily basis felt a greater degree of closeness with their IM partners during the experiment.

In a study of small groups, it was found that during initial meetings FtF users reported higher satisfaction and task performance than did those users in the CMC environment. However, over time the margin of difference in task performance

decreased and in turn, users were reporting similar levels of communication satisfaction, regardless of communication environment (Hollingshead, Mcgrath, & O'Connor, 1993). This indicates that CMC is likely to be useful to those who have adapted to the channel. These findings have implications for media naturalness theory in that with increased use and familiarity with the technology, it is possible that the channel can be perceived as being more natural. According to Spitzberg's model (2006), as CMC competence increases, coorientation (understanding, accuracy, and clarity), efficiency, task success/accomplishment, satisfaction and relationship development (intimacy) are more likely to occur.

Walther's social information processing theory suggests that users of CMC may be able to adapt to the channel by transforming affective intentions into text-based cues (Walther & Burgoon, 1992). This theory found support from studies indicating that users reported transmission of equal amounts of affect from communication partners across CMC and FtF environments. One of these studies consisted of an experiment where participants rated level of affect received across FtF and online chatting dyads, and results indicated that there was affective similarity across conditions (Walther, Loh, & Granka, 2005). In another study comparing communication across FtF and CMC using dyads, it was found that interpersonal sensitivity did not appear to differ a great deal across conditions, with CMC users appear to be just as sensitive to their partner's thoughts and feelings as those in a FtF environment (Boucher, Hancock, & Dunham, 2008). Derks and colleagues conducted a review of the CMC literature with aims to investigate if emotions are communicated differently in different modes of

communication and concluded that CMC was no less emotional or personal than FtF (Derks, Fischer, & Bos, 2008).

The development of communication cues that are specific to CMC is also a form of adaptation. These may include punctuation (!!!!), abbreviations (LOL, laugh out loud, ROTFL, rolling on the floor laughing, etc.), use of fonts and colors, or the use of the emoticon, :-) ;-)<3. Derks and colleagues also conducted a study which included an online survey about emoticon use and an experimental component where participants were asked to respond to online chats (Derks, Bos, & von Grumbkow, 2008). Results suggested that emoticons are used to express emotion, strengthen the content of a message or to convey humor.

Nature of Relationship

Just as level of competence or familiarity with CMC may account for some level of variation in user's experience of CMC versus FtF, having a close relationship with the person with whom you are communicating may also play a role. Kock addresses this factor noting "schema alignment" as a construct referring to the similarity between the mental schemas of an individual and those of other participants (2004).

While pioneering studies of CMC tended to include stranger or non-familiar groups or dyads, authors including Byron (2008) and Friedman and Currall (2003) did give mention to a potential moderating variable of familiarity or closeness of users. Byron's model indicated that when users are more familiar with one another they are less likely to attribute negative meaning to messages and that positive messages would be less at risk for losing message meaning through neutralizing. Friedman & Currall stated that preexisting social bonds among users may dampen escalation dynamics. (Dickey, Wasko,

Chudoba, & Thatcher, 2006) stated, “miscommunications are not the result of technology, but rather occur due to a lack of shared understandings among the individuals communicating.”

Kruger and colleagues (2005) replicated a stranger dyad based design, including friend dyads, which was the only study available that attempted to assess the influence of familiarity of communication partners on communication outcomes. The study intended to measure accuracy of user’s ability to transmit emotions across CMC and FtF and users ratings of confidence to transmit such messages. Users were required to read from scripts and convey predetermined emotions. Findings indicated that familiarity with communication partner had no influence on accuracy or confidence in communication but the authors explained that findings may be confounded by the predetermined message content or script, which may have decreased the facial validity of the design.

While many have commented or theorized about nature of the relationship between users, further research will need to be conducted to determine the degree of influence that this variable may have on how users experience CMC.

Summary

This new line of discussion argues that increased use and familiarity with the technology will result in user’s adaptation to this channel. Spitzberg’s (2006) model suggests that as CMC competence increases, coorientation, efficiency, task success/accomplishment, satisfaction and relationship development (intimacy) are more likely to occur. While theories such as media naturalness theory and media richness theory postulate that CMC is unnatural and inadequate, findings show that in some cases,

CMC is very similar to FtF and does not hamper communication efficiency or satisfaction. It is also possible that adaptation can occur through ongoing communication with those with whom one is familiar, such as a friend or family member. A user may adapt to the channel while also learning to adapt to someone's text-based communication style. The next section will discuss however, that even when users have high familiarity with CMC, have adapted to some degree, and are communicating with someone close to them, most people will still prefer FtF interaction to CMC. This will lead us into the discussion of how CMC is then being used to supplement FtF interaction. The next section will address the use of CMC for relationship maintenance.

Relevant Literature: The Supplemental Use of CMC

One study that conducted phone interviews with adolescents illustrates participant's high use of CMC, but preference for FtF. Participants were asked to reflect on recent communications of both the online (IM) and offline (FtF or phone) nature with a friend or family member (Boneva, 2006). Results suggested that while teens judged IM communication to be less enjoyable than offline communication, IM was still used in high frequency to communicate with others. This author and others (Simon, 2006) were perplexed by the finding that while users reported high use of CMC, they reported lower levels of satisfaction with the communication experience. An explanation may be that familiarity with communication partner and adaptation to the channel creates a mode of communication that while not superior to FtF, is comparable and useful.

A report created by the Pew Internet and Family Life Project (Rainie and Horrigan, 2005) found that while some theorize that the internet and technology pull

families apart their results illustrate that technology and use of the internet for communication actually connect family members to one another. The survey reported 65% of respondents stating that using the internet had helped their relationships with friends and 56% reported that it had helped their relationships with family members.

CMC is used for romantic relationship maintenance in a variety of ways, one of which is to supplement FtF interaction, telephone use, letters, etc (Rabby, 2003). Rabby stated, “[even] the simple act of sending a message [via CMC] helps keep the relationship in existence. It lets the other relational partner know that he or she is on the other person’s mind” (p. 153, 2003).

Ramirez and Broneck examined relationship maintenance and the use of IM by college students using surveys and found that romantic partners and best friends were the most frequent type of relationship maintained when using IM (2003). The authors also found that IM was being used for relationship maintenance in combination with other channels of communication such as the telephone, or FtF communication.

One study assessed how e-mail was being used for both geographically close and distant relationships by examining the content of college students e-mail messages (Johnson, Haigh, Becker, Craig, & Wigley, 2008). Results suggested that family and friends were using it most commonly for self-disclosure, discussing social networks and expressing positivity, while romantic partners were also using the channel for expressing assurances. Through phone interviews, Stafford and colleagues also evaluated the use of e-mail finding that it was most commonly used for interpersonal communication and that the use of e-mail helped maintain meaningful personal relationships (1999).

Explanations for CMC use of this study's participants included e-mail being quicker, simpler, more convenient and affordable than alternative forms of communication.

Research has shown that CMC serves to maintain relationships but there are also findings that suggest that the use of CMC actually increases the quality of relationships. In a longitudinal study on adolescent friendships and IM use, it was found that IM had a positive effect on the quality of adolescents' existing friendships (Valkenburg & Peter, 2009). Another study of adolescent use of IM had similar findings, including the use of IM for relationship formation and maintenance and as well as relationship improvement (Lee & Sun, 2009).

Summary

Maintaining relationships with family members and friends is an important way that CMC is used. While researchers are not finding that users prefer CMC to FtF communication, once users are able to become accustomed to the text-based format they are able to use the channel in a way that is meaningful and useful to their everyday lives. Given that people are finding positive ways to utilize CMC it would be logical to conclude that positive attitudes around CMC are also developing. Positive attitudes are a reflection of positive experiences with past and current use. The perception of a user is also meaningful when one has a negative perception of CMC. The relationship between perceptions and CMC use will be discussed in the next section.

Relevant Literature: Symbolic Interactionism, Perceptions

Symbolic interactionism theory as discussed by Smith and colleagues (2008) explains how people define situations, experiences, and interactions based on their own

perceptions and sense of self. How one reacts to different situations is based upon what meaning they ascribe based on past experiences and interactions with others as well as from their interaction with society at large. The theory refers to the product of interactions as *symbols*, and explains the term *interactions* as any communication taking place between two or more people, which could be verbal or non-verbal.

William Isaac Thomas stated in what is known as the Thomas theorem that “if people define situations as real, they are real in their consequences.” The symbol that is attached to any given experience or interaction dictates how one will experience it. Taken in the context of the use of CMC, what meaning one assigns to this form of communication based on past experiences will influence how they experience an e-mail exchange, an online chat conversation, or a text message. If a person assigns positive useful meaning to CMC, they will likely have positive experiences of its use, whereas those who assign negative meaning to CMC based on past experiences will likely have negative experiences of its use.

Kelly and Keaton, in an article discussing the development of an affective scale of CMC use (2007) continue this discussion:

Individuals develop positive or negative affect toward channels of communication through their experiences with and perceptions of these channels. If people perceive e-mail as a cold and impersonal medium, for example, their use of e-mail is likely to be influenced by that affect... [this] enables scholars to begin to explore predispositions toward certain electronic channels over FtF communication and to better understand how and why such predispositions influence CMC behavior (Kelly & Keaten, 2007).

There appears to be a connection between how one perceives CMC and what symbol is assigned to the experience and how that symbol both influences future experiences of CMC and future decisions around CMC use. It can be deduced that those with positive experiences will likely continue to use the channel for relationship maintenance and those with negative perceptions will likely avoid the use of CMC or certain forms of CMC all together.

Technology acceptance model (TAM) as discussed by Chang and Wang (2008) suggests that attitudes towards CMC are linked to intentions around use and decisions to use CMC. In other words, how useful one perceives CMC to be (based on past experiences) will either encourage or deter someone from using it again in the future for similar purposes. An example would be if someone were successfully using CMC for relationship maintenance, they would have a positive attitude towards use of CMC in the future for the same purpose.

Chang and Wang (2008) also discuss the implications of attitudes and perceptions towards CMC use using the theory of reasoned action (TRA). They suggest that predispositions for CMC may affect intentions and experience of use. According to the theory of reasoned action (TRA):

A user's beliefs determine his or her attitudes towards using a system.... it suggests that social behavior is motivated by an individual's attitude towards carrying out that behavior, which is a function of his or her beliefs about the outcome of performing that behavior and the evaluation of each of those outcomes (Chang & Wang, 2008).

Based on this discussion both the inadequacy and adequacy arguments discussed previously have relevance in the discussion of CMC. However, the nature of the channel and how users adapt may be reflections of how a user perceives the channel and then chooses to use it. The text-based channel is not inherently good or bad, but is ascribed meaning based upon an individual's experiences.

Increased use or adaptation or familiarity with one's communication partner may have particular relevance to perceptions or decisions around use in that any new symbol or experienced event is assigned meaning with such meaning being dynamic. Meyer and Perry (2001) discuss the pragmatics of symbolic interactionism stating:

As events occur for individuals, meanings change because of interactions. When participants discern nonexistent or small differences, the change is akin to reinforcement of previous meanings. When they find more substantial differences, meanings can be altered in fundamental ways (Meyer & Perry, 2001).

This is relevant to the discussion of experiences of CMC in that an individual may have a given perspective on the usefulness of CMC, which influences decisions around use, but it is also possible that a new experience with the channel will alter that perception.

Meaning is also discussed as being negotiable:

When differences in meaning become apparent in certain situations, understanding is only achieved by recognizing that these result from different past experiences of the individuals involved. In turn, diverse experiences create varied expectations. Understanding expectations and anticipated consequences requires

negotiation by participants... The text of media content is created jointly by the individual interpreting some of the elements of that content and with subsequent interactions with others in the social environment (Meyer & Perry, 2001).

While the individual is the basic unit that experiences events and determines the meaning that influences perceptions, interaction with others in the context of close relationships may encourage the altering of perceptions and therefore change the meaning of a symbol. Each individual within an interaction experiences a separate reality, but the dyad as a unit also has a sense of how it experiences events. Such is also the case for the individual's interaction with social groups, social norms, and society at large. Individuals may assign one meaning and have perceptions of CMC use based on their own past experiences, however, a family member or spouse may elicit a different experience and expectation of use. This interaction will then be negotiated, and the individual or the dyad may assign new meaning. The same dynamic negotiation process may also take place when individuals are influenced by the social practices of their peer group, such that instant messaging is the norm for peer communication. The individual has the initial choice to experience interactions and events and assign meaning but all interactions exist within the context of others, thereby influencing the meaning making and perception of the individual.

Summary

The discussion of symbolic interactionism as a means of understanding one's experience of CMC and the use of CMC is helpful in that it gives perspective to a disjointed field of literature. This set of theories on attitudes and perceptions sheds light on the importance of the meaning that is assigned to CMC communication. This

meaning, that can influence one's experience of CMC and can shape current decisions around use, may also be negotiable or pragmatic. Attitudes and perceptions may be a variable that reflects all other aspects of adaption, familiarity and use. The theoretical lens of symbolic interactionism may also help to explain how and why some families experience the use of the internet as a destructive tool that isolates its members, pulling the family apart and other families find CMC to be a helpful tool that strengthens the bond of the family through relationship maintenance. The same explanation is also true when looking at the use of CMC by romantic couples. Some argue that CMC can be beneficial in helping couples discuss heated issues, while others insist the use of CMC for serious discussion is inappropriate.

Conclusion

While some argue that the actual nature of the technology dictates how a user will experience use, others suggest that factors such as degree of adaptation and perceptions be considered as factors that may influence experience. The actual nature of CMC and FtF are different in that FtF allows for non-verbal cues and immediate feedback and CMC does not. However, it has been found that with increased use of and familiarity with CMC, users can adapt to the channel to a degree of proficiency that allows them to communicate in a manner similar to that of FtF. It is also possible that familiarity with one's partner and style of communicating using CMC will influence the experience. Theories that focus on cues, including media naturalness theory and media richness theory, should be used in the context of evaluating the nature of the channel and should not assume that nature alone dictates one's experience of the communication. Such assumptions should also not be made in terms of increased use, familiarity and

relationship with communication partner in terms of adaptation. While one may have the skills to use CMC, and may have a degree of familiarity with their communication partner, this does not dictate a favorable experience of use. It is then one's perceptions or attitudes about CMC that are meaningful. One's experience then may be influenced by a variety of variables including: the nature of the channel, degree of adaptation to a CMC channel, familiarity with communication partner, and past and present experiences of use and current perceptions or attitudes towards use. The debate around implications of internet use and technology for families will continue and the use of symbolic interactionism theory and other theories of attitudes and perceptions can inform these future research efforts.

Chapter 3

The Present Study

Purpose

There are concrete differences between the nature of CMC and FtF channels, CMC is commonly used for relationship maintenance, but there is a preference for FtF and that some users are able to use CMC in a way that is equal to that of FtF in terms of message interpretation and transmission of affect and emotion. However, many questions are left unanswered: What factors influence a difference in experience between FtF and CMC? How do couples experience CMC specifically? Are perceptions what ultimately influence experience of CMC? How do experiences shape decisions around use?

The purpose of the present study is to focus in on how CMC and FtF are experienced and what factors influence a difference in experiences across conditions. An additional aim of the study was using couples as the communication dyad to introduce discussion around how romantic partners experience and use CMC. This study will both extend the literature on how individual users experiences CMC versus FtF communication and what factors influence experience as well as help begin the discussion on how individuals communicating with a romantic partner experience CMC versus FtF communication.

Unit of Analysis

The experience of the individual will be used as the primary unit of analysis given the argument made by symbolic interactionism that the individual creates their own reality and system of symbols and meanings based upon their own subjective experiences

of interactions with others. However, it is also important to address Meyer & Perry's (Meyer & Perry, 2001) discussion on meaning being negotiable. The very nature of interaction with others implies that there is also a dyadic interactional unit to be considered. For the purposes of this study, the individual will be assessed for experience of communication in both FtF and CMC environments, and the couple unit will be assessed for experience in semi-structured interview following the communication experience.

Couples as Participants

Nature of the relationship between communication partners may be an influential factor in how one experiences communication using CMC as was discussed in a previous section. It was also noted that there is a lack of use of couples as research participants in the current literature. The present study's participants were currently in committed relationships with one another. Assessing the couple's experience as a dyad in semi-structured interviews was helpful in continuing discussion on how couples use this channel to maintain relationships and how the couple as a unit experiences CMC.

Research Question: What factors influence communication satisfaction and communication experience in CMC versus FtF conditions?

Familiarity with CMC or degree of adaptation to a channel had both theoretical and empirical support as a moderating variable of experience (H1). Symbolic interactionism theory and other theories of attitudes and perceptions discussed attitude and beliefs about CMC as having the capacity to influence experience of communication in FtF and CMC environments (H2). There also seems to be a relationship between these

two variables, such that with increased familiarity and use of CMC one is able to adapt to the channel allowing for more positive experiences and perceptions of use (H3). It is also understood however, that even with increased levels of adaptation and positive perceptions of use, users will still find FtF to be more satisfactory, using CMC primarily as a supplement to FtF (H4). These rationales inform the following hypotheses:

- H1a: There will be a positive correlation between familiarity with and use of CMC and levels of satisfaction after the CMC condition
- H1b: Scores of use will be related to differences in ratings of satisfaction across FtF and CMC environments, such that when Use Scores are high, there will be little difference across conditions and when use scores are low, there will be a greater difference across conditions.
- H2a: There will be a positive correlation between perceptions of and attitudes towards CMC use and levels of satisfaction after the CMC condition
- H2b: Scores of attitudes will be related to differences in ratings of satisfaction across FtF and CMC environments, such that when Attitude Scores are high, there will be little difference across conditions and when attitude scores are low, there will be a greater difference across conditions.
- H3: There will be a positive correlation between Use Scores and Attitude Scores
- H4: Participants will rate their FtF discussion as more satisfactory than the CMC discussion.

Chapter 4

Design and Method

The data used for the present study was derived from a larger ongoing study being conducted on couples communication and how individuals and couples experience CMC. Recruitment and data collection occurred from January 2010 to summer of 2010. In addition to collecting assessment scores as measures of communication satisfaction, measures of physiological arousal were also collected. Sensors were worn by participants throughout the protocol monitoring heart rate, muscle activity and skin conductance. For the purposes of this paper, only self-reported measures of communication satisfaction and assessment scores are used. The University of Kentucky's IRB Board approved the larger study in January 2010 (Appendix A). For further information on design of larger study, see Appendix B.

Participants

The sample included 44 individuals (22 couples). These couples were recruited from flyers placed around the University of Kentucky, and ads placed in newspapers and online classified ads for the Lexington, KY area including Craig's List and Facebook Marketplace. This sample is a non-probability convenience sample. Inclusion criterion consisted of the interested party currently being in a serious relationship, both partners being over the age of 18 and both partners having some familiarity with instant messaging programs (AOL Instant Messenger, Facebook chat, Gmail chat, etc.). Couples that participated in the study received \$75-100. Compensation was determined based upon random selection for a post-interview. Couples that were selected for the interview

received \$100 and couples that were not selected received \$75. Eight couples were pre-selected from this sample to participate in post-interviews.

The sample consisted of heterosexual couples (20 couples, $n = 40$ individuals, 91%), and two gay couples ($n = 4$ individuals, 9.1%). The sample was 77% Caucasian, 14% African-American, 2% Asian, 2% Hispanic, 2% Native American, and 2% Bi-racial or other. Participants ranged in age from 18 to 49 years old ($M = 29$, $SD = 8.41$). The length of current relationship status for the sample consisted of 4.5% having been together for 1-2 months, 6.8% for 3-6 months, 11.4% for 7 months to a year, 9.1% for 13 months to 2 years and 68.2% having been together for over 2 years. Marital status included 40.9% married, 8% engaged and 40.9% in a serious relationship. The majority of participants reported that they are currently living with their spouse (72.7%) with 27.3% reporting living separately. Highest level of education attained included 2.3% having completed some high school, 15.9% completing high school or earning a GED, 43.2% having attended a 2 year college or earning an associate's degree, 25% earning a Bachelor's degree and 13.6% earning a graduate degree. See Table 1 for further description of demographic description of sample and Appendix C for demographic questions completed by participants.

Table 4.1. *Demographic Information*

Item	Category	N	%
Gender	Male	24	54.5
	Female	20	45.5
Sexual Orientation	Straight	40	90.9
	Gay	4	9.1
Ethnicity	Caucasian	34	77.3
	African-American	6	13.6
	Latino/Hispanic	1	2.3
	Asian	1	2.3
	Native American	1	2.3
	Other or Mixed	1	2.3
Level of Education	Some high school	1	2.3
	HS Grad or GED	7	15.9
	2 year college	19	43.2
	Bachelor's degree	11	25
	Graduate degree	6	13.6
Relationship Status	Serious Relationship	18	40.9
	Engaged	8	18.2
	Married	18	40.9
Length of Relationship	1-2 months	2	4.5
	3-6 months	3	6.8
	7-12 months	5	11.4
	Over a year – 2 years	4	9.1
	More than 2 years	30	68.2
Living Situation	Living Together	32	72.7
	Living Separately	12	27.3

Table 4.2. *Assessment Scores of Sample*

Variable	Total (n=44)
CMC Use Score	$\chi = 38.75$, SD 6.63
Attitude Score	$\chi = 24.41$, SD 4.12
FTF Satisfaction	$\chi = 37.96$, SD 8.04
CMC Satisfaction	$\chi = 37.59$, SD 6.48
Age	$\chi = 28.81$, SD 8.41

Measures

CMC Use. Items used to assess for familiarity, frequency of use and adaptation to CMC included items from a CMC competence measure developed by Spitzberg (2006) as well as original items developed by this study’s author. The CMC Use assessment used for this study consisted of 10 items. All items were on a 5 point Likert scale (“not at all true of me, 1” to “very true of me, 5”) (Appendix D).

The 10-item scale was evaluated using factor analysis to determine directionality and to give an indication of which items were reliable for use in the scale (See Table 3). The analysis indicated that the items were unidirectional and a cutoff score of .7 was used to identify high loading items. Six items were selected for a scale. This six item scale was then measured using inter-item reliability with a Chronbach’s alpha of .85. The entire ten item scale was also assessed for inter-item reliability, with a Chronbach’s alpha of .85. While not all items in the ten item scale met the .7 cutoff in the factor analysis, all items did load in at above a .4. Given the consistency of the items within the first group in the factor analysis and lack of change in reliability across tests, the full 10-item

instrument was used to report CMC Use. Max score is 50 and minimum score is 10. Mean scores can be seen in Table 2.

Table 4.3. *Factor Analysis of CMC Use Items*

Item	Factor 1	Factor 2	Factor 3
1. I am very knowledgeable about how to communicate through computers.	.70*	.38	-.40
2. I am never at a loss for something to say in CMC.	.55	.22	.60
3. I am very familiar with how to communicate through email and the internet.	.75*	.36	-.37
4. I always seem to know how to say things the way I mean them using CMC.	.48	.69	-.18
5. When communicating with someone through a computer, I know how to adapt my messages to the medium.	.45	.50	.42
6. I rely heavily upon my CMCs for getting me through each day.	.77*	-.39	-.16
7. I use computer-mediated means of communication almost constantly.	.79*	-.24	.19
8. I can rarely go a week without any CMC interactions.	.56	-.59	-.27
9. I am a heavy user of computer-mediated communication.	.78*	-.37	.27
10. If I can use a computer for communicating, I tend to.	.72*	-.14	.06

Note. * indicates .7 cutoff

Attitude toward CMC. Items used to assess attitudes and perceptions of CMC included both original items created by the author and additional items from Spitzberg's CMC competence measure (2006). This assessment included 13 items on a 4 point Likert scale ("strongly disagree, 1" to "strongly agree, 4"). See Appendix E for original scale of items. Factor analysis was also used for this scale to determine grouping of items within the scale (Table 4). The analysis indicated that items were unidirectional,

primarily loading into one group. Some items did not seem to fit within the unidirectional group and were therefore excluded from the scale used for analysis. Other items seemed to fit within the group, but did not meet the .7 cutoff. Five items met the cutoff and the five item scale was then assessed using an inter-item reliability measure, with a Chronbach's alpha of .85. Three additional items that did not meet the cutoff, but had high face validity and also loaded into the first group in the factor analysis were added to the 5 items and the larger 8 item scale was assessed for inter-item reliability, with a Chronbach's alpha of .85. Given the consistency of the items within the first group of the factor analysis, the added face validity of the additional items and lack of change in reliability across tests, the 8-item scale was selected for use in analysis. The maximum score is 32 and minimum 8. Mean scores can be seen in Table 2. Original scale and selected items used for analysis can be seen in Appendix E.

Table 4.4. *Factor Analysis of Attitude toward CMC Use*

Item	Factor 1	Factor 2	Factor 3
1. I feel that CMC hinders or would hinder communication with my partner	.57	-.33	.46
2. My preference is to use CMC sparingly with my partner	.45	-.08	.56
3. When debating or discussing an issue of contention, I sometimes like to use CMC as a method of communication	.24	.67	.55
4. When communicating with my partner using CMC, I sometimes feel misunderstood	.20	-.52	.36
5. I prefer to use CMC to discuss an important issue on which my partner and I have differing opinions	.08	.74	.43
6. My partner and I have more productive conversations when using CMC	.21	.80	-.003
7. I have a negative perception of using CMC to communicate with others	.82*	-.18	.14
8. I use CMC to reiterate or clarify a point made during a face to face or phone conversation	.13	.60	-.34
9. I have a positive attitude about using CMC	.85*	-.07	.01
10. I enjoy communicating using computers.	.84*	.07	-.12
11. I am nervous about using the computer to communicate with others.	.60	-.29	-.15
12. I look forward to sitting down at my computer to write to others.	.70*	.13	-.44
13. I am motivated to use computers to communicate with others.	.76*	.13	-.43

Note. * Indicates .7 cutoff

Communication Satisfaction Scales. The communication satisfaction scale was created using a variety of sources. In a study by Walther and Bazarova (2008) a communication satisfaction scale was developed combining 15 items selected from Hecht's 19 item Interpersonal Communication Satisfaction Inventory (Com-Sat) (1978)

and two group communication satisfaction items selected from a four item scale by Jarboe (1988). Hecht's scale was found to be highly reliable in a number of communication studies ($\alpha = .97$ for actual treatment in which students engaged in social conversation with each other, .93 among friends, and .97 among acquaintances). Jarboe's scale was also found to be reliable with a Cronbach's alpha of .84.

For this study, the 17 items originally combined by Walther were included. Additions to the scale included items from a scale created by Simon (2006) and original items developed by the present study's author. Participants completed a 24 item, 7 point Likert scale ("strongly disagree, 1" to "strongly agree, 7"). See Appendix F for full 24-item scale.

The communication satisfaction scale was administered to each participant after a FTF discussion and again after a CMC discussion. This rendered two sets of measurements for analysis – CMC satisfaction and FTF satisfaction. Items in both sets of communication satisfaction were assessed using factor analysis, both analyses appearing to be unidirectional (Table 5 and 6).

While some of the high loading items were consistent across FTF and CMC, others differed. The process to select appropriate items to create one cross-condition scale included assessing high loading items for both CMC and FTF using a cutoff score of .7. There were originally eight FTF items with a Cronbach's alpha of .93 and nine high loading CMC satisfaction items with a Cronbach's Alpha of .92. Efforts were made to measure the inter item reliability of different combinations of high loading items (from the factor analyses) from each scale, adding and deleting items. The goal in this process

was to maintain the highest reliability possible to create one cross-condition scale to be used to measure communication satisfaction. A final collection of seven items was found that could be used to measure satisfaction in communication across both CMC and FTF (FTF $\alpha = .91$ and CMC $\alpha = .91$).

For the final scale, a maximum score is 49 with a minimum of 7. Mean scores for FTF and CMC satisfaction can be seen in Table 1. Original scales and items selected for final scale used for analysis can be seen in Appendix F.

Table 4.5. *Factor Analysis of Satisfaction Scale Items after FtF*

Item	Factor 1	Factor 2	Factor 3
1. The other participant let me know I was communicating effectively	.60	-.41	.31
2. I would like to have more discussions like this one	.62	-.04	-.24
3. I am very dissatisfied with the communication	.84*	-.24	.08
4. I felt that during the conversation I was able to present myself as I wanted the other person to view me	.56	.42	-.02
5. The other participant showed that they understood what I had said	.64	-.32	.24
6. I was very satisfied with the communication	.83*	-.14	-.20
7. The other participant expressed a lot of interest in what I had to say	.72*	-.31	.18
8. I did NOT enjoy the conversation	.84*	-.17	.11
9. I felt I could talk about anything with the other participant	.50	.43	.28
10. We each got to say what we wanted	.78*	.27	-.12

Table 4.5 (continued)

Item	Factor 1	Factor 2	Factor 3
11. I felt that we could laugh together easily	.50	.57	.32
12. The conversation flowed smoothly	.68	-.30	-.10
13. The other participant changed the topics when their feelings were brought into the conversation	.46	-.50	.24
14. The other participant frequently said things which added little to the conversation	.53	-.50	.24
15. We talked about things that I was not interested in	.48	-.60	.17
16. I felt free to participate in this discussion	.54	.21	.26
17. I felt relaxed and comfortable with this partner	.62	.40	.34
18. This mode of communication was efficient in helping us work on this task	.77*	.30	-.12
19. I would recommend that others use this form of communication	.66	.29	-.30
20. The mode of communication slowed us down	.70*	.14	.11
21. I liked communicating with my partner this way	.83*	.40	-.12
22. This mode of communication felt unnatural or artificial	.61	-.22	-.65
23. Using this method of communication for a discussion of this nature would be common for me and my partner	.47	.43	-.05
24. During this discussion I wished that I could switch modes of communication to finish the conversation	.61	-.22	-.65

Note. * Indicates .7 cutoff

Table 4.6. *Factor Analysis of Satisfaction Scale Items after CMC*

Item	Factor 1	Factor 2	Factor 3
1. The other participant let me know I was communicating effectively	.61	.12	-.30
2. I would like to have more discussions like this one	.59	.10	-.10
3. I am very dissatisfied with the communication	.58	.23	-.56
4. I felt that during the conversation I was able to present myself as I wanted the other person to view me	.70*	.05	-.20
5. The other participant showed that they understood what I had said	.64	-.05	-.25
6. I was very satisfied with the communication	.90*	.14	.05
7. The other participant expressed a lot of interest in what I had to say	.71*	.25	-.21
8. I did NOT enjoy the conversation	.82*	-.20	.06
9. I felt I could talk about anything with the other participant	.64	-.36	-.14
10. We each got to say what we wanted	.76*	-.37	.13
11. I felt that we could laugh together easily	.64	.10	-.29
12. The conversation flowed smoothly	.84*	-.13	-.17
13. The other participant changed the topics when their feelings were brought into the conversation	.30	-.62	.15
14. The other participant frequently said things which added little to the conversation	.47	-.57	.27
15. We talked about things that I was not interested in	.70*	-.08	.08
16. I felt free to participate in this discussion	.65	-.11	.22
17. I felt relaxed and comfortable with this partner	.65	-.44	.05
18. This mode of communication was efficient in helping us work on this task	.75*	.19	.27

Table 4.6 (continued)

Item	Factor 1	Factor 2	Factor 3
19. I would recommend that others use this form of communication	.69	.32	.47
20. The mode of communication slowed us down	.33	.53	.13
21. I liked communicating with my partner this way	.75*	.34	.30
22. This mode of communication felt unnatural or artificial	.68	.21	.07
23. Using this method of communication for a discussion of this nature would be common for me and my partner	.44	.60	.23
24. During this discussion I wished that I could switch modes of communication to finish the conversation	.41	.42	-.22

Note. * Indicates .7 cutoff

Procedures

Communication across Conditions. This protocol included asking each couple to have a conversation face to face and another conversation using a method of CMC. They completed a measure of communication satisfaction after each interaction. Having participants rate their satisfaction after real time conversations allowed for feedback on communication satisfaction and experience. It was also deemed necessary to have each couple interact in each environment rather than each couple being assigned to random groups because the essence of the research question is how the individual and couple experience the communication environments and how those experiences are different rather than comparing randomly assigned couples.

Time for Interactions. Multiple studies suggest that a greater amount of message content can be communicated in FtF communication as compared to a text-based CMC

such that one minute in FtF is not equal to one minute in CMC as the nature of typing decreases the amount of remarks generated per minute.

(Mallen et al., 2003; Walther et al, 2002; Walther et al., 2005). This is in large part because typing of messages requires more time than vocal utterances, and that turn taking is delayed in CMC. It is recommended therefore that when comparing FTF and CMC interaction, more time be allotted in the CMC condition to allow for equal time for processing. These findings lead to the extension of interaction time in CMC, with the CMC interaction being allotted 15 minutes and FtF 10 minutes.

Channel. Instant Messaging (IM) is one of the forms of CMC that most closely resembles FtF communication. Ramirez and colleagues discussed IM as sharing many of the same synchronous characteristics of FtF and its degree of usability and naturalness make it an attractive relational maintenance tool (Ramirez & Broneck, 2003). Ramirez and colleagues also found that of all methods of CMC, IM fills the broadest niche indicating that it can replace other method of CMC such as e-mail (Ramirez, Dimmick, Feaster, & Lin, 2008). The online chatting program AOL Instant Messenger (AIM) was used for this protocol. Couples were directed to separate rooms for the CMC portion of the protocol and used AIM to chat with one another on desktop computers. For the FtF portion, participants sat in the same room facing one another.

Protocol. Upon arrival, the couple was instructed to read and sign an informed consent document (Appendix G) and complete a demographic survey (Appendix C). The couple was then asked to select topics for discussion, each partner being responsible for one topic. The couple was instructed to pick topics that would be an issue of contention

for their relationship or that they had differing opinion on or could problem solve around. The couple was also advised that the two topics should be of equal intensity. The couple was provided with a sample list of discussion topics for assistance in selection of topics. Once topics were selected, a coin was flipped to determine which topic would be discussed first. This process and interaction with participating couples is discussed in more detail in original study's training manual.

The order of discussion environments was pre-determined, with couples 1-10 and 21-22 having their CMC discussion first and FTF discussion second; couples 11-20 having their FTF discussion first and their CMC discussion second. This pattern of switching order every 10 couples was being used for the ongoing study from which this data was derived. At the time of data extraction, 22 couples had completed the study. After discussions in each communication environment participants were asked to reflect on their discussion and complete a communication satisfaction assessment. Organization of protocol can be seen in Figures 1 and 2. Communication satisfaction assessment can be seen in Appendix F. After discussions were completed, randomly selected couples were asked to stay for an additional 10-15 minutes to participate in a semi-structured post-interview (see Appendix H for semi-structured interview).

Figure 4.1. Design, Couples 1-10 and 21-22

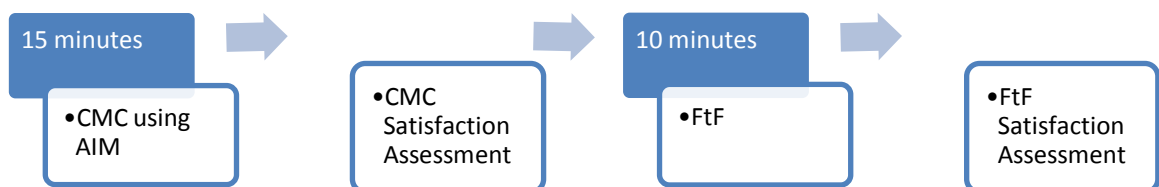
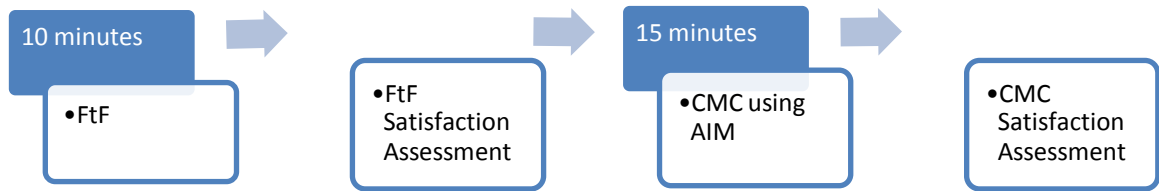


Figure 4.2. Design, Couples 11-20



Chapter 5

Results

The results section will detail the process undertaken to analyze data collected for this study. The first section will describe the measures taken to answer the hypotheses including correlations, regressions and comparison of means. The second section will describe the properties of the sample, which was skewed. It will also describe attempts made to interpret the non-linear sample. The final section will include exploratory descriptives of communication satisfaction scale items based on the comparison of individual scale items across communication conditions and using quotes from the semi-structured post-interview.

Analysis Completed from Proposal

Correlations.

H1a: There will be a positive correlation between familiarity with and use of CMC and levels of satisfaction after the CMC condition.

H2a: There will be a positive correlation between perceptions of and attitudes towards CMC use and levels of satisfaction after the CMC condition

H3: There will be a positive correlation between Use Scores and Attitude Scores

The hypothesized relationships in H1a, H2a and H3 were assessed using correlations (Table 7). Correlation between Use Score and CMC Satisfaction, $r = -.01$. Correlation between Attitude Score and CMC Satisfaction, $r = .28$. Correlation between Use Scores and Attitude Scores, $r = .66$, $p = .001$. See Table 7 for correlations.

Table 5.1. *Correlations of Predictor Variables and Outcome Variables*

Variable	Use Score	Attitude Score	FtF Score
Use Score	1.00		
Attitude Score	.66**	1.00	
FtF Satisfaction	.20	.08	1.00
CMC Satisfaction	-.01	.28	.42**

Note. ** indicates significance at the 0.01 level

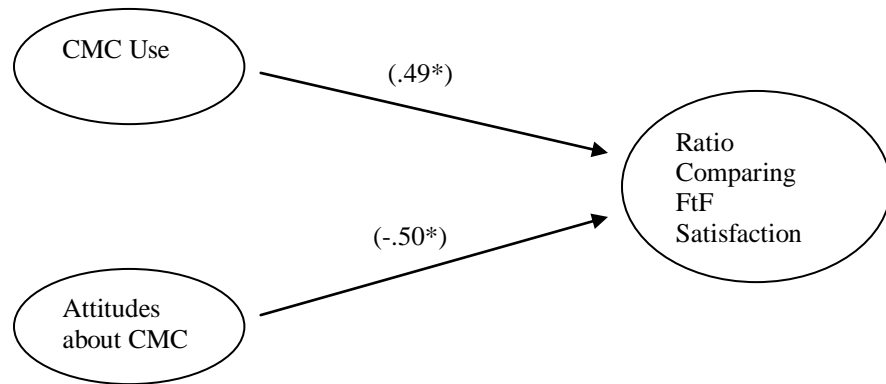
Regressions.

H1b. Scores of use will be related to differences in ratings of satisfaction across FtF and CMC environments, such that when Use Scores are high, there will be little difference across conditions and when use scores are low, there will be a greater difference across conditions.

H2b. Scores of attitudes will be related to differences in ratings of satisfaction across FtF and CMC environments, such that when Attitude Scores are high, there will be little difference across conditions and when attitude scores are low, there will be a greater difference across conditions.

Ratio scores were calculated to determine the difference in FTF satisfaction and CMC satisfaction. A score of “1” (a 1:1 ratio) indicates no preference, >1 = a preference for FTF and <1 = a preference for CMC. This ratio score was used as the outcome variable for the regressions needed for H1b and H2b. Use and attitude scores were loaded as the predictor variables (Figure 3). Both factors were shown to significantly predict the ratio of different, Use Score, $b = .49$, $t(2.56)$, $p < .05$, Attitude Score, $b = -.50$, $t(-2.61)$, $p < .05$.

Figure 5.1. *Regressions, Influences on Difference in Communication Satisfaction*



Mean Comparison

H4: Participants will rate their FtF discussion as more satisfactory than the CMC discussion.

For H4 mean scores for FtF Satisfaction and CMC Satisfaction were compared. $M=37.59$, $SD = 7.48$ for CMC satisfaction score and $M=37.96$, $SD=8.04$ for FtF satisfaction score (Table 8). The difference ratio used for the regression was also examined to compare scores. For the FtF/CMC ratio, $M=1.0$, $SD = .26$ indicating a 1:1 ratio for FtF to CMC, signifying no preference when comparing satisfaction across environments. Comparison of raw mean scores for the two environments also reflected very little difference in communication satisfaction.

Non-linear Distribution of the Data

The 1:1 ratio of the communication satisfaction scores and the counter-intuitive correlation and regression results indicated that this sample might not have a normal

distribution. Scatter plots of satisfaction scores (Figure 4) and CMC satisfaction and Use and Attitude scores (Figures 5 and 6) were examined for linearity and it was concluded that this sample is non-linear. Previously reported results included attempts to analyze results linearly, which were not in fact appropriate given the fact that correlations and regressions are only appropriate for samples with a normal distribution.

Figure 5.2. *Scatter Plot, CMC Satisfaction and FtF Satisfaction*

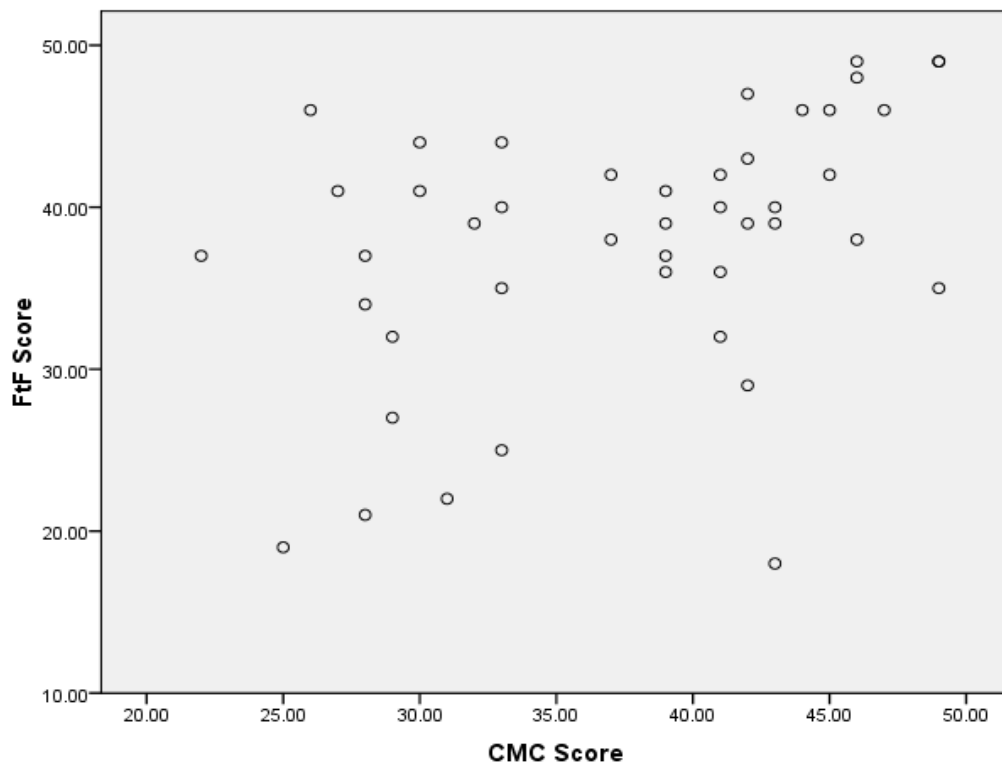


Figure 3.3. *Scatter Plot, CMC Satisfaction and Use Score*

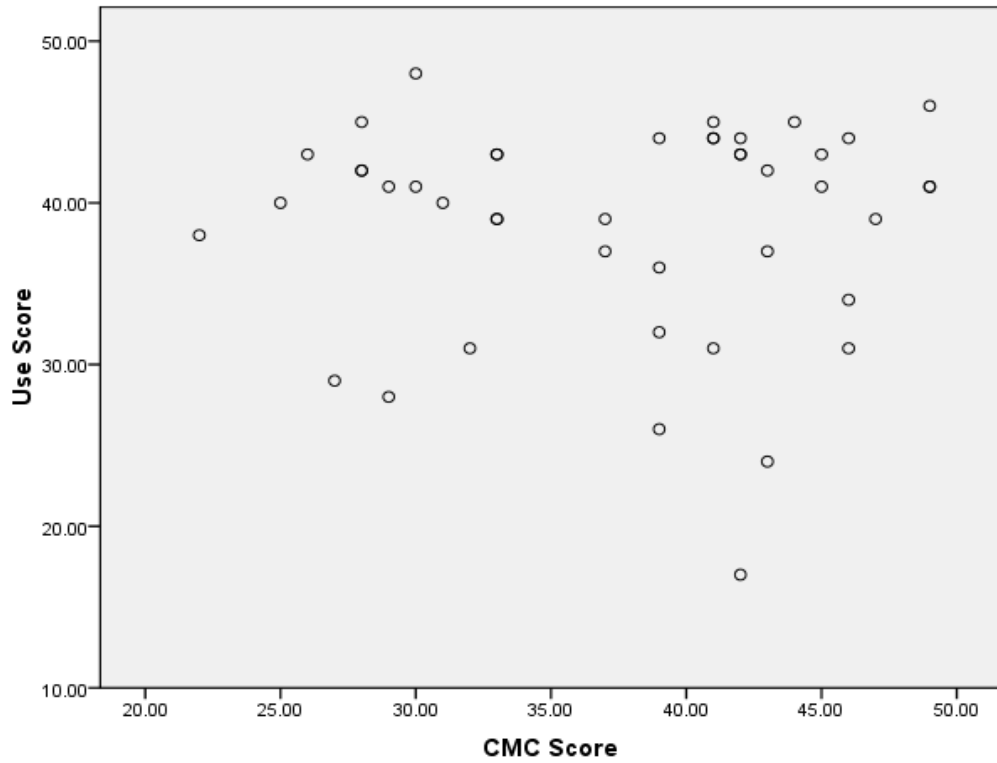
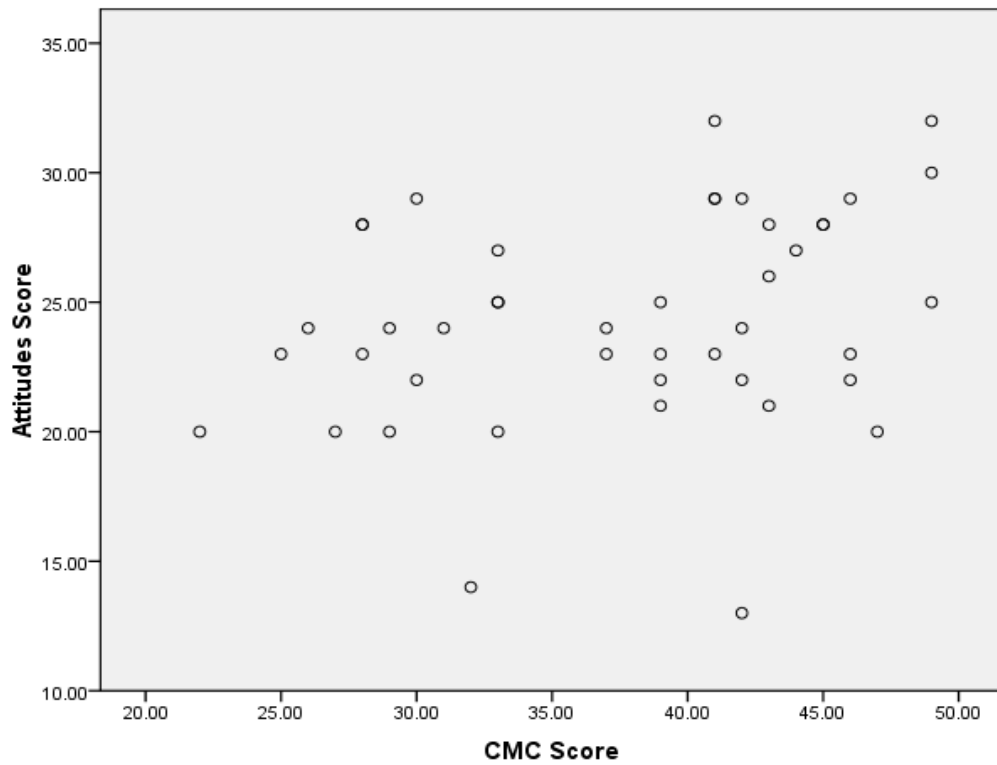


Figure 5.4. *Scatter Plot, CMC Satisfaction and Attitude Score*



Attempts were made to find some meaning in the sample by comparing categorical data. Three categories for each of the four assessment scores using $\frac{1}{2}$ SD above and below the mean as criterion were created to attempt to further assess the data. This resulted in cell size being too small for analysis. To increase cell size, Use and Attitude scores were reduced to two categories using above and below the mean and creation criterion. Even with increased cell size, there still appeared to be no difference in the findings. Creation of the categories actually removed significance found in regressions.

The sample was further evaluated for skewness. A normal distribution has a skewness statistic of zero. A skewed distribution can be detected when a skewness value is twice its standard error, which can be seen for all assessment scores in Table 7. The table also illustrates the truncated assessment scores with average scores coming in very close to maximum possible scores. This may indicate that the sample consisted of people who were high users of CMC and had positive attitudes about CMC use. It is possible that the skewed, non-linear sample is a result of not having enough variance in assessment scores.

Table 5.2. *Distribution of Sample, Skewness*

Variable	Min.	Min.	Max.	Max.	M	SD	Skewness	
	Reported	Possible	Reported	Possible			Statistic	SE
Use Score	17	10	48	50	38.75	6.62	*-.137	.357
Attitude Score	13	8	32	32	24.41	4.11	*-.49	.357
CMC Total	22	7	49	49	37.59	7.48	*-.29	.357
FtF Total	18	7	49	49	37.96	8.04	*-.92	.357

Note. * Indicates skewness value twice SE

Exploratory Comparison of Satisfaction Items.

While comparison of individual communication satisfaction items was not indicated in the research question or hypothesis, assessing differences in how CMC and FtF is experienced has been discussed in detail in the literature review and overarching purposes of this study. While the distribution of the sample is non-linear and representative of high users and those with positive attitudes about use, the sample may still be representative of the population. Exploring how these users experienced FtF versus CMC may still provide a good deal of information about users of CMC in general. The finding that average communication satisfaction scores indicate no preference for FtF versus CMC motivates an exploration into comparing average scores on individual items of the scale (Table 9).

Table 5.3. *Analysis of Communication Satisfaction Items*

Item	FtF	CMC	M Ratio of Difference	Preference
I was very satisfied with the communication	M = 5.34, SD = 1.43	M = 5.21, SD = 1.32	1.10	FtF
The other participant expressed a lot of interest in what I had to say	M = 5.21, SD = 1.39	M = 5.09, SD = 1.44	1.10	FtF
I did NOT enjoy the conversation (reverse coded)	M = 5.36, SD = 1.67	M = 5.57, SD = 1.48	1.03	No preference
We each got to say what we wanted	M = 5.66, SD = 1.16	M = 5.86, SD = .98	.98	CMC
The conversation flowed smoothly	M = 4.80, SD = 1.72	M = 5.34, SD = 1.31	.94	CMC
This mode of communication was efficient in helping us work on this task	M = 5.86, SD = 1.03	M = 5.61, SD = 1.10	1.09	FtF
I liked communicating with my partner this way	M = 5.72, SD = 1.42	M = 4.90, SD = 1.52	1.31	FtF

Based on the mean scores for each item, it was found that on all items across both conditions, participants were answering the items favorably (range of M = 4.90 – 5.86, with 4 = Neutral and 7 = Strongly Agree). While the means and mean ratio scores comparing overall levels of satisfaction indicate that there was relatively high satisfaction for both conditions and that there appears to be no preference across conditions, it was deemed a useful exercise to determine if there was any meaningful variance in individual items across conditions. As it can be seen in Table 9, some items on the communication

satisfaction scale indicate little variance while other items do appear to offer some indication of a larger variance. Quotes from the semi-structured interviews will inform the results found in the item comparisons. After identifying quotes that were relevant to preferences for aspects of CMC or FtF for the couples, some groupings and themes emerged as can be seen in the following sections.

Items Indicating a Preference for FtF:

Item: *“I was very satisfied with the communication”*

Item: *“I liked communicating with my partner this way”*

These items have participants report on their overall experience of the communication conditions, and provide little additional information beyond the general measure of “communication satisfaction.” While the overall scale measures indicated no preference for CMC versus FtF, these individual items did indicate a preference. In general, FtF is going to be more natural as the literature suggests (Kock, 2004). The following selections from the interviews further this point.

1. *Male*: “I would personally prefer FtF with her [his girlfriend]...and it is different with other people, but I just feel like it’s important to have FtF conversations with your spouse or significant other because I feel like things can be misconstrued, and you’re supposed to be together as one....and to text...it leaves the other person to develop thinking that can be way over here in left field, and you wanted them over here.”
2. *Female*: “I don’t think I use it as a form of serious communication – I think it’s harder to convey things and things can get misinterpreted through that and I feel like if I’m going to talk about something serious I’d rather talk to someone in person so that you can see their body language...and I think too, sometimes if you’re saying things on text message or something like through the internet you can say things that you don’t really mean cause you’re not face to face with them, so it’s easier to say things you don’t mean.”

3. *Male*: “I would rather talk to someone in person, but if I can’t, then I’ll use it [CMC].
4. *Male*: “When you have the opportunity to be with somebody, why not talk in person?”

These participants are expressing a preference for FtF communication with their spouse. While some seem to have only a moderate preference, others express concerns around CMC fostering miscommunication. This was a common concern of using CMC as articulated by many of the participants in the semi-structured interview.

5. *Female*: “I think sometimes when people say things through instant messaging... sometimes you can’t read what people are saying , you’re like, is that sarcastic or is that sincere?”
6. *Female*: “I think it [FtF] might be more honest.”
7. *Interviewer*: “Would you ever use CMC to discuss an issue or for problem solving?”

Spouse 1: “I wouldn’t.”

Spouse 2: “No, because you can’t really get any detail on what people are thinking. I’d rather use Skype for things like that because you can see them, and be like, I see you! I see the face you’re making! So I dunno, I would rather just talk to him in person.”

8. *Male*: “I don’t like texting because it’s harder to know someone’s emotions.”
9. *Male*: “I think I use chatting, or texting or whatever for family and friends when it’s just something quick, but if it’s something serious I’d rather just do it in person.”
10. *Female*: “When texting, things may come across two different ways, so things are up for interpretation.”

11. *Spouse 1*: “We actually just had an argument over the internet and I told him I would rather just talk face to face with him. I felt like I was being lied to and it’s a lot easier to be lied to over the internet.”

Spouse 2: “It’s a lot easier to say something over the internet, when you’re not having to look at them.”

Spouse 1: “There are more consequences FtF. So unless you have a really good imagination and can picture them talking, and saying these things on the other side of the computer, it’s just text. I don’t think that’s a good way to communicate for a serious conversation.”

12. *Male*: Sometimes my texts seem like I’m being mean or crude because I don’t put as much personality into it. My mom, aunt, grandmother, even on e-mail, “Are you upset?”, “No, why?”, “You just seem short”.”

Many of these examples give support to theories such as media naturalness theory and media richness theory that state that CMC is lacking in cues, that affect and content of messages cannot be transmitted effectively and that the channel is unnatural and less useful and efficient than FtF (Daft & Lengel, 1986; Kock, 2004; Kock, et al., 2008). These concerns and misgivings of using CMC are valid, and the examples of miscommunication are real.

The next two items give an indication of what aspects of the actual experience of FtF communication may have made it more satisfactory in comparison to the CMC condition.

Item: “*The other participant expressed a lot of interest in what I had to say*”

1. *Male*: “But for face to face, it’s the physical aspect of it. You can touch each other; you can give each other a hug or a kiss, that sort of thing.”
2. *Male*: “I just know that you can’t really get tone through a text message, so you don’t know if a person is getting what you’re saying, so that’s the reason I don’t like to use it. I would rather just call a person and talk to them.”

The preference for FtF for this item may indicate a usefulness of non-verbal's that would be difficult to replicate in CMC. Physical touch and active listening skills such as eye contact or head nodding are important aspects of tracking communication and signal to a communication partner that you are paying attention to what is being said and that they understand.

Item: *"This mode of communication was efficient in helping us work on this task"*

1. *Male*: "I get aggravated with extremely long text conversations because it seems like it takes up so much more time when I could have a 30 minute text conversations versus a three minute phone call, but with some people it is a lot quicker to just text message than talk."
2. *Female*: "The only time I wouldn't want to text is if it's going to be something really long and drawn out, and I'll say just call me or talk at home, but other than that, yeah."

These responses speak to the inherent lack of synchronization of CMC that is natural to FtF communication. While these participants are specifically referring to SMS's, which is usually a less synchronous form of CMC than IM which was used in the present study, the discussion still may be relevant to the efficiency of CMC in general. When texting, one partner may be busy, or may wait to respond to a message, or it may take the sender longer to type a message than is expected by the receiver, all of which may decrease efficacy. When using IM both partners are likely sitting at a computer at the same time, focused on the conversation, which may increase naturalness or efficacy. In general, however, most couples will find communicating face to face more effective than IM or SMS's which is reflected in the comparison of mean scores for this item across conditions. It is also possible, as was implied by the quoted participants that CMC is useful when a message is short or the content is not complex, but if a topic if lengthy or

ongoing discussion of a topic is needed, CMC loses its efficiency. For the present study participants were asked to discuss an issue relevant to their relationship, again indicating that for a discussion of this nature, participants indicated a preference for the FtF condition.

Items Indicating a Preference for CMC:

The two items indicating a preference for CMC included “We each got to say what we wanted” and “The conversation flowed smoothly.” In exploring responses from couples interviewed that indicated usefulness or a preference for CMC, these items seemed to reflect a few different themes that could be categorized under either item. These themes included the following: CMC allowing for more time for reflection and being able to think more about what you wanted to say, interruption in communication being eliminated when using CMC, escalation being decreased when using CMC, and non-verbal’s used in FtF actually being a hindrance to communication. Responses from participants included multiple themes in each exchange, and therefore in this preliminary analysis of interviews rather than categorizing responses based on scale items, sections of quotes will be given followed by interpretation and previously mentioned themes will be noted.

Item: “*We each got to say what we wanted*”

Item: “*The conversation flowed smoothly*”

1. *Spouse 1*: “Usually when we get into a fight and we’re mad at each other [we text].”

Spouse 2: “He’ll go to the basement and I’ll go upstairs and we’ll text each other”

Spouse 1: “Cause usually when you send a text it solves the issues...”

Spouse 2: “Instead of arguing, ya know.”

Interviewer: “Why do you think it’s useful to you in that way?”

Spouse 1: “Because both of us get our point in, because there’s no interrupting, because you have to wait and see what they’ve got to say, and then you say something.”

Spouse 2: “So yeah, when [FtF] breaks out into an argument or something and it’s just like, you know we’ll just use text ...and get chilled out, and say well this is what I think about the whole thing, or whatever.”

Spouse 1: “...and plus, it doesn’t allow you to say something you’ll regret later, ya know cause you’re so tired and maybe you’ll say, well maybe I shouldn’t say that, so I do think it helps with that. When you’re face to face you may just blurt something out, and think man, I shouldn’t have just said that.”

- Spouse 1:* “CMC is almost preferred for discussing issues. Well, if there’s an altercation, or some sort of a dispute over something, it’s just easier, because usually one of us will get mad, and he’ll leave, and then it’s just text after that. For some reason I think it’s better, because things don’t get as heated when you can’t explain things as well. But then it takes longer to get your point across because you have to type.”

Spouse 2: “Yeah, usually [FtF] will end up just making me mad, because he just won’t listen. But if I text him, he’ll read it. He’ll have to listen.”

Spouse 1: “When you’re reading something it’s different when the person is upset, ya know, whatever. It’s different from hearing it and their voice is getting louder and then you start screaming...you can’t get that on a text message. I just prefer it...to all that in your face yellin”.

Both of these couples give examples of how CMC can be useful for decreasing interruption or increasing turn taking in communication, facilitating de-escalation of conflict or a cooling off period and giving each partner time to really think about what they want to say.

- Female:* “We e-mail a lot, I feel like I can get more out of him in written stuff, because it gives you more time to process what you’re thinking...But I don’t

really feel like we have to go there. It's just sometimes I'll write him an e-mail because I feel like I'll get more out of him... Maybe my brain works too fast, so sometimes I'll stop and be like, okay, it's your turn to talk."

This is an example of how CMC can be used to help one less talkative partner contribute to the conversation, giving them more opportunity to express themselves.

4. *Female*: "For me, like when we're talking on the phone and arguing, I just want to get it out of the way and he just wants to go off and cool off, and think it can cause a problem, but it makes me feel better cause if he was to leave when we're arguing, I can just text him right away whereas he's ignoring me, and it still drives me nuts that he's ignoring me and not writing me back and cooling off or whatever, but at least I get it out, so I think it helps and hurts."

This example also gives evidence that CMC is useful in helping one partner communicate what they would like to say, while it allows the other partner the space and opportunity to cool off while not fully withdrawing from the communication because they are still accessible by cell phone.

5. [This couple used to be in a long distance relationship, but now live together]
Spouse 1: "In the chat I always get a chance to think a little more about what I'm going to say. I think it's helpful..."

Spouse 2: "It helps, well especially for us because English is her second language... like when we were long distance and got into a fight on the phone and then we would write an e-mail and could really outline exactly what we were thinking, that was actually really helpful... Yeah, when we would get in a fight [on the phone], and then we would sit down and write explaining what was up."

Spouse 2: "Actually, we miscommunicate more [now] FtF. You can't catch tone [on CMC]... but actually we have more miscommunication now than we did then, come to think of it."

Spouse 1: "Like if he would write something on the chat and I didn't get it, he knew he had the right to tell me, 'Oh, it was a joke.' But when it's FtF, it's immediate, like if you don't get it you better say it that minute."

Spouse 2: "Yup, you're right, we do get in more fights now."

The theme present for this interaction is that when communicating FtF, one may assume that a partner understands message content and emotions. However, this couple suggested that more attention was given to clarifying messages when they were using CMC.

6. *Female*: “It’s more aggressive [FtF]. When you’re chatting you get more of a chance to go through everything...and you put a happy face, and that’s exactly what it means.”
7. *Male*: “In past relationships, one in particular, the only way we communicated serious conversations was through e-mail...I think we were both afraid of our reactions to the other one’s words. So that was the main way to discuss any issue that we had.”

Both of these responses indicate that there is some hesitation or fear of escalation when communicating FtF and that CMC provides some sort of barrier to the potential for this, perhaps by dampening the intensity of emotions or affect.

8. *Female*: “But there have been times when we fight now, and I haven’t gotten to say what I wanted, so I sent him a text.”
9. *Female*: “We may have an argument that night and then I send him a text the next morning and try to finish it.”

Interviewer: “Why do you think that’s easier?”

Female: “Emotions, keep them more concealed, because in a text you don’t have to see them. And body language.”

Interviewer: “And so that’s helpful?”

Female: “I mean, it’s helpful to me, but not to a relationship, no, not at all.”

These two responses indicate that they find CMC useful in that they get to continue to say what they want, or get a point in from a previous discussion. The second female respondent continues on to explain that emotions and body language are more concealed making it easier for her to communicate even if she knows it isn't healthy for her relationship. This may again be an indicator that CMC is useful or helpful to some in that it decreases the intensity of emotions allowing the couple to deescalate a discussion or conflict.

Chapter 6

Discussion

The hypotheses of the present study are unable to be conclusively supported or unsupported given the skewed nature of the sample. This discussion will first include a section addressing factors that contributed to the skewness of the sample and possible means to correct this non-linear distribution for future studies. The following sections will include a discussion of H3 and H4, using both statistical results and quotes derived from participants during the semi-structured interview on their use and experience of CMC. The final sections will include general limitations of the study and recommendations for future research.

Possible Factors Contributing to Skewness

Methods used to recruit participants were primarily based online including online classified advertisements, e-mail flyers and an online posting for research being conducted at UK. These online-based recruitment efforts may have unintentionally targeted a population of couples that were high users with positive attitudes, contributing to the skewed sample. An additional factor that may have contributed to the skewness of the sample was that eligibility for participation included both members of the couple having some experience using online chatting programs or text messaging. Rationale behind this requirement was based upon the feasibility of potentially having to teach or explain to a participant how to use an online chatting program, which may include teaching someone how to use a keyboard, how to use a mouse, etc. and time constraints that this would create for scheduling. A final factor that may have contributed to the

skewness is the very nature of the study and its purpose; how couples use technology to communicate and how does this experience compare to FtF communication? It is likely that those who are frequent users and enjoy CMC would find this study interesting or enjoyable and would respond to an advertisement. In effect, recruitment methods, eligibility, lab design and nature of the study may have contributed to skewed nature of the sample.

Attempts could made to recruit low users of CMC or a population with negative perceptions including using advertising methods that are not internet or technology related, such as posting flyers around town, or using printed newspapers for ads. The requirement that participants have some experience using CMC could also be eliminated with the understanding that more time may need to be allotted for those participants with less familiarity with the technology. While the IRB board does require participants to have explicit knowledge of the procedures and purpose of the study, attempts could be made to make the using technology for communication aspect less prominent in advertisements.

Discussion of Results, H3

While results found for components of H1 and H2 were inconclusive given the nature of the sample, some thought can be given to the results of H3 and H4. H3 stated that there would be a positive relationship between attitudes and perceptions. This hypothesis was supported. This is consistent with the discussion on symbolic interactionism theory stating that there appears to be a connection between how one perceives CMC and how one makes decisions around use. The symbol that is attached to

any given experience or interaction influences how one will experience it. Technology acceptance model (TAM) also suggests that attitudes towards CMC are linked to intentions around use and decisions to use CMC, as does the theory of reasoned action, both discussed by Chang and Wang (2008). While the literature states that perceptions of CMC will influence decisions around use, this correlation does not imply directionality. All that can be concluded is that there is a relationship between the two variables.

Examples given by the couples in the semi-structured interview, however, provide more detail into this relationship. It appears that the assigned meaning of symbols can change over time or be negotiated within the couple.

Adaptation to preferences of partner, Negotiation:

1. *Female*: “I know that in past relationships, if I didn’t want to talk to that person, I would just send them a text. I think it’s helpful for us though, it helps us keep up with one another. I don’t know that I would necessarily do that with him [referring to current spouse]; just because I don’t think he’d want to do that. He’d rather talk about it FtF. Like if I started yelling at him in a text message he would just say, “Alright, I’ll talk to you later.”
2. *Male*: “I wouldn’t normally use text to talk to him about an issue because he doesn’t really like texting.”
3. *Female*: “I would say definitely that I use it more than my boyfriend does, but I would also prefer one on one conversation more with people...[speaking to boyfriend] If you really liked talking on the internet more, than I would probably do it more.”

These examples are all consistent with Meyer and Perry’s discussion of the possible negotiation of meaning when using mediated communication (2001). The individuals within the couple, based on past experiences developed their own perceptions or attitudes towards use. That perception and preference for use is then negotiated within

the couple. When a difference is encountered within the couple, a negotiation must be made. These examples illustrate that in some couples there is one individual that may be more willing to negotiate their preference for use than the other.

Change in preference, Pragmatics:

4. *Male*: "I think we've adapted to each other's preferences. I don't have nearly as many conversations with you [speaking to partner] online as I used to. Either you [speaking to partner] can't respond, don't respond, or don't respond to the point where I can understand."
5. *Male*: "And it was strange, because with other people, if it was something serious, I always wanted to do it face to face, but with her, because it was always long distance, I was more comfortable discussing our stuff through e-mail."

These examples illustrate that with new experiences of use comes new meaning around use. The first participant's statement indicates a decrease in CMC use influenced by negative experiences of use. The second participant's account indicates an increase in CMC use based on positive experiences. This is consistent with Meyer and Perry's discussion that meanings change as a result of new interactions (2001). An individual's perception of CMC may be based on its degree of usefulness, but a new meaningful experience may change such a perception. This change may then have implications for decisions on use and future experiences with CMC.

The relationship that exists between perceptions of CMC and use of CMC can be explained using the theory of symbolic interactionism and other theories of attitudes and behavior include TRA and TAM. The semi-structured interviews also add dimension to this discussion indicating that perceptions of use and levels of variables that are not only

related, but that have an ongoing relationship of negotiation within a couple and also that meaning and perceptions of CMC can change overtime due to new experiences.

Discussion of Results, H4

H4 stated that participants would be more satisfied with their communication after the FtF discussion than the CMC discussion. The comparison of means and the 1:1 ratio indicated that participants did not have a preference for communication environments indicating an acceptance of a null hypothesis. One explanation for this finding is that the nature of the sample, such that it consists of high users with positive attitudes, consists of users that have adapted to the channel to a degree that makes it high in “naturalness” or comparable to FtF communication, having reached what Kock referred to as “cognitive adaptation” (2004). The semi-structured interviews gave some indication that a process of “adaptation” existed, both in adapting to the channel as well as in adapting to using the channel to communicate with their partner.

Adaptation to Channel:

1. *Female*: “We’ll try to clarify something, just to avoid the potential that something could be misunderstood [when using CMC]– like saying, ok, don’t take this the wrong way.”
2. *Spouse 1*: “We know each other pretty well, and we can get our point across with exactly what we mean to say with a message or two.”

Spouse 2: “Well we met online, so we really knew that part of each other before we knew FtF.”

Spouse 1: “Usually I can tell, or he can tell from the next text message if something was taken wrong.”

Both of these examples indicate that the couple uses strategies to reiterate the meaning of their message in the case that something is misinterpreted. The second couple also stated that their relationship began online, so they were well versed in using CMC to communicate with one another. These are both examples that support social information processing theory (Walther & Burgoon, 1992) that states users of CMC adapt to the channel by transforming affective intentions into text-based cues or fill in gaps to overcome the lack of non-verbal cues.

3. *Spouse 1*: “I could tell a difference in the chatting, he seemed more relaxed and had more in-depth answers.”

Spouse 2: “The conversation reminded me of a dispute that we had texting...we have those, not very often. I don’t like doing it, I can’t convey what I’m feeling. But I feel like having a keyboard rather than a phone made it easier to convey what I meant. Because you can say whatever you have in your vocabulary, but when you’re texting it has to accept the word, but if you’re typing you can just type whatever you want to type. I think typing is much easier, versus using a phone.”

Spouse 1: “Well, I have the iPhone. So I’ve had to catch myself recently, because I can type it up easily and I’m done, and I’m thinking, my gosh, why is it taking them so long? So I might have sent him 2 or 3 text messages and he’s still working on the first one, so I’ve had to watch that.”

Spouse 2: “When it’s something emotional, or heated, it seems like whoever can text the fastest, wins.”

The exchanges between this couple gives multiple examples of adaptation.

Spouse 1 indicates that he struggles to express himself using text messaging and that his partner’s ability to out-type him makes the communication less useful. However, when provided with a full keyboard to type for the online chatting during the protocol, not only did he report feeling more comfortable expressing himself and more efficient in doing so,

but his partner also reported that he seemed more relaxed and gave more in-depth answers. This indicates that while some modes of CMC can be cumbersome and asynchronous, others, such as IM or SMSs using newer model cell phones can be experienced as useful and more natural. This speaks to the essence of media naturalness theory (Kock, 2004; 2008). While some users of CMC may find the technology not useful, or very unnatural, modes of CMC exist that allow users to experience CMC that allows for an increase in naturalness such that it may be comparable to that of FtF communication.

Adaptation to Partner

6. *Male*: “I’ve gotten to know that [his texting style] as much as possible, but it’s still hard to know if there is any personality, or if he’s upset or if he’s just talking.”
7. *Female*: “I don’t feel like I understand his texting style. Like he could try to be as nice as possible in a message and I’ll take it the wrong way. So I’ll just pick up the phone and find out that I was way off.”
8. *Male*: “I can tell she’s yelling at me when it’s in all caps.”

Having a close relationship with one’s communication partner would help minimize the possibility for escalation of conflict or for miscommunication (Byron, 2008; Friedman & Currall, 2003). In addition, Dickey and colleagues (2006) stated, “miscommunications are not the result of technology, but rather occur due to a lack of shared understandings among the individuals communicating.” Kock referred to this factor of familiarity with one’s communication partner as “schema alignment” (2004). The examples from the semi-structured interviews indicate that merely being in a committed relationship does not guarantee that one will have successful understanding of

their partner's message when using CMC. While most couples interviewed stated that they did not have problems understanding one another, the quotes obtained from the interviewed couples suggest that some couples do still have trouble either adapting to the channel, or adapting to one another's styles of using CMC.

Communication Satisfaction: Preferences

The results section comparing specific items of the communication satisfaction scale was useful in attempting to add dimension in exploring the null hypothesis that indicated that participants had no preference for a communication environment based on the results of the communication satisfaction scale. Findings suggest that there may some aspects of communication, however, that were experienced more favorably in FtF and others that indicated a preferred experience of CMC. In general, the individual items assessing for overall satisfaction indicated a preference for FtF. In addition to these items, efficiency, and one's partner expressing interest in what they had to say were aspects of the communication experience that were rated higher in FtF. Aspects of CMC that participants rated higher than FtF included getting to say what they wanted and the conversation flowing smoothly.

Using the semi-structured interviews provided some insight into how users may have experienced the environments and what factors of experience influence a preference for FtF or CMC. Some themes of preferences emerged indicating why some prefer FtF and some prefer CMC and how CMC is used by couples in general. Participants indicated some hesitation to use CMC based on the possibility for miscommunication and

the lack of non-verbal cues as well as a lack of efficiency when using CMC to discuss a complex or lengthy issue.

A prominent theme was that for some couples there was a preference for CMC when there was a conflict or when a discussion escalates. Couples reported that CMC allows for a cooling off period and communicating using a mode of CMC allows for the partners to each say what they want. This may indicate that couples may use the same technology for different purposes and to achieve different goals in communication.

While these interviews informed the findings reflected in the comparison of scale items, a more in-depth qualitative analysis should be carried out in order to assess for more concrete concepts and themes of preference and use.

It would also be useful to continue to investigate what factors influence a couples preference for using CMC versus FtF when having a disagreement given the present studies inability to answer these questions conclusively.

General Limitations

One methodological limitation was that of scale construction. The scales used in their entirety were not validated by previous studies. Items from scales were combined and new items were created and added to the scales to create an instrument that would measure the variable in question. This creates a lack of validity to those variables being assessed using these scales.

A possible issue of fidelity is that participant's communication satisfaction scores could be reflecting their experience of communicating in a lab more so than what their

experience was communicating FtF versus CMC. While couples communication studies are normally conducted in a lab with research staff present, the alternative CMC condition that took place online may have provided more privacy, allowing the participants to feel more relaxed. There is a possibility that either the lack of privacy or awkwardness that the couples may have experienced communicating FtF with a research assistant present or the privacy allowed in the CMC condition may have influenced communication satisfaction scores.

The generalizability of these findings may also be limited. Ideally, the communication that takes place in the lab should be similar to how participants would have discussions at home or how they would use and experience FtF or CMC in everyday life. For CMC, IM was chosen because it filled the biggest use niche, and because the developing technology of cell phones allows chatting programs to be used via cellular devices. In addition, access to full keyboard or touch screens on phones creates a channel that is very similar to instant messaging while sitting down at a computer. While a great deal of the participants stated that they primarily use text messaging, and that the instant messaging environment replicated that experience, other participants stated that they use a multi-touch phone for text messaging, in which typing out a message takes a greater amount of time than using a full keyboard sitting at a computer. This is a limitation around generalizability because those who use a mode of CMC that is not similar to instant messaging or synchronous SMS will experience CMC in the lab differently than they would in everyday life.

Future Studies

The sample, while skewed for the purposes of this study and these hypotheses, could be useful in gaining insight on average or high users of CMC. As stated in the literature review, one study found that 73% of American adults are going online and 78% of American adults own cell phones and also reported that one of the main uses of the internet is interpersonal communication (Jones, 2009). This indicates that the sample collected here, while statistically skewed may actually be representative of the population. It may be more useful then to use variables with more variance to predict differences in how CMC and FtF are experienced, such as length of time in relationship, age, gender, relationship satisfaction, etc.

Future directions for research include investigating if satisfaction with a communication experience predicts or is related to task completion or being able to make progress on resolving an issue and how communicating across conditions influences this ability. Another direction would be to further explore the theme indicated in the communication satisfaction scale item analysis and the interviews suggesting that CMC is used as a tool for deescalating conflict for couples. Examples of CMC use from the interviews suggest that when the conflict escalates to a degree where one or both partners are overwhelmed with emotion, or are experiencing increased physiological arousal, referred to as “flooding”, the partners will physically separate or need to take a break from the discussion, but were able to continue discussing the issue using CMC. It will also be useful to assess how the concepts of emotional and physiological flooding and

withdrawal from conflict are experienced in FtF versus CMC. There may also be clinical implications for the use of CMC such that having couples use a channel to communicate that decreases flooding may better their ability to effectively work through a conflict or may increase satisfaction with problem solving or communication in general. Uses and gratifications theory may be a useful framework to investigate the psychological factors that influence how couples are using CMC and why different couples use the same channels of communication for very different purposes. The actual content of messages across conditions could then be evaluated to assess if there is a difference in negativity or positivity being expressed in messages, with intentions of assessing if some couples engage in more healthy communication when it is text-based versus FtF.

Final Thoughts

The purpose of the current study was to focus in on how CMC and FtF are experienced and what factors influence a difference in experiences across conditions. While the skewed nature of the study did not lend itself to findings of sound statistical significance, some findings could still be derived from the data that make significant contributions to the field. The sample, representing those with a relatively high rate of CMC use and generally positive attitudes towards use, after communicating both FtF and using CMC indicated no difference in communication satisfaction across conditions. This is an important finding given the high rates of use of CMC for interpersonal communication among friends, family members and romantic partners. While CMC has often been considered supplemental and inferior to FtF interaction, this finding may suggest that users, specifically romantic partners, may find texting, IMing or using other

methods of CMC just as satisfactory as communicating FtF. This finding has implications for theories addressing adaptation or cues being filtered back into the channel. In addition, the tentative correlations between attitudes and use have implications for theories of perceptions including symbolic interactionism. This theory provides a foundation for the ongoing conceptualization of how and why the use of CMC, the internet and technology in general are experienced and perceived in a variety of ways; that behaviors of use and attitudes towards use are based on both the individual's experiences with CMC and the negotiation of meaning that can take place based on ongoing interactions with actors in one's social context.

The preliminary information derived from interviewing the couples is also important in that it dispels some of the myths around CMC only being used for relationship maintenance or sending short messages only meant for transmitting simple information. These couples suggested that couples are not only using CMC for discussing more complex or sensitive issues, but that some couples actually prefer this channel of communication to FtF. This has major implications for not only the field of computer-mediated communications but also that of couples and marriage communication, family studies and marriage and family therapy.

APPENDIX A



Office of Research Integrity
IRB, IACUC, RDRC
315 Kinkead Hall
Lexington, KY 40506-0057

Initial Review

Approval Ends
January 7, 2011

Project Ends
May 31, 2010

IRB Number
09-0963-F4S ^{fax 859 257-8995} www.research.uky.edu/ori/

TO: Martha Perry, B.S.
Family Studies
315 Funkhouser Building
Campus 0054

(859)257-5527

FROM: Chairperson/Vice Chairperson
Non-medical Institutional Review Board (IRB)

SUBJECT: Approval of Protocol Number 09-0963-F4S

DATE: January 20, 2010

On January 20, 2010, the Non-medical Institutional Review Board approved minor revisions requested at the convened meeting on January 8, 2010, for your protocol entitled:

*Couple's Use and Experience of Communication in a
Computer-mediated Environment*

Approval is effective from January 8, 2010 until January 7, 2011, and extends to any consent/assent form, cover letter, and/or phone script. If applicable, attached is the IRB approved consent/assent document(s) to be used when enrolling subjects. [Note, subjects can only be enrolled using consent/assent forms which have a valid "IRB Approval" stamp unless special waiver has been obtained from the IRB.] Prior to the end of this period, you will be sent a Continuation Review Report Form which must be completed and returned to the Office of Research Integrity so that the protocol can be reviewed and approved for the next period.

In implementing the research activities, you are responsible for complying with IRB decisions, conditions and requirements. The research procedures should be implemented as approved in the IRB protocol. It is the principal investigator's responsibility to ensure any changes planned for the research are submitted for review and approval by the IRB prior to implementation. Protocol changes made without prior IRB approval to eliminate apparent hazards to the subject(s) should be reported in writing immediately to the IRB. Furthermore, discontinuing a study or completion of a study is considered a change in the protocol's status and therefore the IRB should be promptly notified in writing.

For information describing investigator responsibilities after IRB approval has been obtained, download and read the document "PI Guidance to Responsibilities, Qualifications, Records and Documentation of Human Subjects Research" from the Office of Research Integrity's Guidance/Policy Documents web page [<http://www.research.uky.edu/ori/human/guidance.htm#PIresp>]. Additional information regarding IRB review, federal regulations, and institutional policies may be found through ORI's web site [<http://www.research.uky.edu/ori/>]. If you have questions, need additional information, or would like a paper copy of the above mentioned document, contact the Office of Research Integrity at (859) 257-9428.

A handwritten signature in cursive script that reads "Norm Van Tubergen, PhD / sma". Below the signature is the printed text "Chairperson/Vice Chairperson".
Chairperson/Vice Chairperson

APPENDIX B

Couples Communication Training Manual

Spring 2010, version 3

General Information:

- ****DO NOT** leave keys in the Lab!! Door automatically locks!!**
 - Entire protocol will take place in the lab and small conference room attached to Family Studies office
 - Assistants and participants should be using the hallway for transitioning and should not be accessing the Family Studies office, use outside door to access small conference room
 - Lab coats should be worn at all times
 - Batteries should be changed in each Nexus every other couple
 - Parking passes are available to research participants and can be provided upon participant's arrival
 - Every 10 couples, the order of communication environment will switch
 - 1-10, CMC – FtF, 11-20, FtF – CMC, etc
1. Verify participant ID #
 - a. Couples are assigned a letter of the alphabet, with participant in the lab = 1 and resource room = 2
 - i. Ex. A1 & A2, G1 & G2
 - ii. First half of couples collected = females stay in lab, men in the resource room. Second half of couples = males stay in the lab, females in the resource room
 - iii. However, because we are not specifically recruiting heterosexual couples, this may need to be altered
 - b. Retrieve pre-labeled envelope with informed consent, brochure, receipts and compensation from locked file cabinet
 2. Prepare computers
 - a. Start up 2 laptops, computers behind partition in Lab, desktop in Lab, desktop in conference room, big screens in both rooms
 - i. Conference room desktop is a public computer

1. SIGN OUT “Guest” login
2. SIGN IN “MFT” login
 - a. Login: ##### password: #####
- ii. Lab Desktop
 - a. Login: ##### password: #####
- b. Load programs
 - i. SurveyMonkey, enter in the following addresses into web browser on desktops in both lab and conference room (create new tabs for each survey)
 1. www.surveymonkey.com/s/CMCSatisfaction
 2. www.surveymonkey.com/s/FtFSatisfaction
 3. www.surveymonkey.com/s/CouplesCommunication
 4. enter participant ID on first page of all surveys (A1, A2, etc)
 5. Make CouplesCommunication survey tab available first
 - ii. AOL Instant Messenger will automatically begin when signed in, if not signed in, follow login instructions...
 - a. Desktop in Lab - Screen name: ##### password: #####
 - b. Computer behind partition – Screen name: ##### password: #####
 - c. Conference Room – Screen name: ##### password: #####
1. From ##### window (behind partition)
 - d. Click “Menu”
 - e. Click “New Group Chat”
 - f. In screen, enter #####, #####
 - g. Press send
 - h. Accept chat invitations on desktop computers in both Lab and conference room
 - i. This will allow you to monitor chat, ensuring that internet connection is not being interrupted
2. Ensure that Lab computer is logging the chat
 - a. From AIM window, click “Menu”
 - b. Click “Settings”
 - c. Select IM Archives from menu on the left
 - d. Ensure that “archive chats” is selected

3. Using same steps, ensure that other desktop computers being used for chat are NOT logging chat
- iii. BioTrace
 1. Start program on both laptops from desktop icon
 - a. Click “Start” button
 - b. Click “Go to my protocols” button at bottom
 - c. Click “Perry protocol” at top of menu
 - iv. Video Equipment
 1. Turn on monitors in the Lab behind partition using gray remote control, monitors should come on
 2. Cameras should be pre-set and in focus
 3. Chairs should be within view of camera
 4. Label recordable DVDs with client ID numbers (A1 and A1)
 5. Insert recordable DVDs
 - a. Initialize discs
 - b. Set Lab monitor to “composite” to allow initializing and recording for center computer
3. Prepare NeXus equipment
 - a. Ensure that 2 NeXus with wires are prepared in Lab
 - b. Attach appropriate sensors to wire ends
 - i. Regular white sensors for SC
 - ii. Floating sensors for EMG – Use *RED 1 and BLACK 1*
 - iii. Regular white for ground
 - c. *If Nexus is not pre-set with wires:* From pouch, attach wires to two separate NeXus
 - v. EMG in input C
 - vi. SC in input E
 - vii. BVP in input G
 - viii. Ground in small input on the left (?)
 - d. Gather supplies, NeXus and Laptop and arrange for use in lab and conference room
 4. Determine participant assignment/research assistant tasks
 - a. One assistant for each participant
 - b. Assistant will work with, hook up equipment to and instruct one partner for duration on protocol
 - i. *One will work with participant A – stay in the lab*

- ii. One will work with participant B – in conference room*
- c. Determine if one assistant or both will conduct post-interview

Introduction

1. Greet participants
2. Explain timeframe of study to participants (Total time is at least 1 hour 15 minutes, with post interview, 1.5 hours)
 - a. Informed consent, (5 minutes)
 - b. Separate to different rooms for paperwork (15-20 minutes)
 - c. Hook them up to equipment, heart rate, skin conductance, muscle tension (5 minutes)
 - d. Comparison Test (8 minutes)
 - e. Discuss a topic in separate rooms and reflect on conversation (20 minutes)
 - f. Break (5 minutes)
 - g. Discuss a topic face to face in the same room and reflect on conversation (15 minutes)
 - h. Possible post-interview (only for chosen participants) (10 minutes)
3. Informed consent
 - a. Place informed consent documents on clipboard with pen
 - b. Allow couple to read informed consent document
 - c. Ask if they have questions, briefly review document with couple
 - d. Inform couple if they have been randomly selected for post-interview
 - e. Have participants sign document, you will also sign the document
 - f. Make copy of informed consent and return copy to participants
4. Compensation
 - a. Give participants compensation
 - b. Write receipt and place receipt and informed consent in envelope marked by participant ID
 - c. Return receipt and copy of informed consent to participant with UK Family Center Card/Brochure and Martha Perry BHMI Card
 - d. Keep envelope in file cabinet in the lab until it can be returned to Suann during business hours for filing purposes

Topic Selection

1. Explain to participants that they will need to each pick out 1 topic that is relevant to their relationship

- a. Topics need to be something that they are both comfortable discussing for the study and topics need to be of approximately the same level of intensity
 - b. Topics should be issues of contention that they will be able to actively discuss for 10-15 minutes, a resolution is not required by the end of conversation
 - i. If clients need additional assistance, can supply sheet with topic ideas
2. Flip a coin to determine which topic will be discussed first

Assessments

2. Direct participants to desktop computers in separate rooms
3. Explain types of surveys that they will be taking
 - a. Demographics – basic information
 - b. Survey about their current relationship
 - c. Survey about trust and comfort in relationships (aka attachment)
 - d. Surveys about their use of and attitudes about computer-mediated communication, or using technology to communicate with others
4. Bring up CouplesCommunication full survey and instruct participant to fill it out
 - a. Let them know to take their time, and that you will be available to answer questions
5. Give participants 15 minutes to complete assessments
 - a. Check in at 15 minutes and give more time as needed
 - b. In conference room can sit in the hallway while they work, or can sit in the room at the end of the table
 - c. In lab, wait on other side of partition

Equipment Hook Up

1. Offer clients the restroom, they won't have another opportunity to go without equipment attached for over an hour
2. Attach equipment
 - a. Ask client to hold NeXus while you attach
 - b. Use cleansing pads from pouch to abrade skin, allow skin to dry
 - c. Place SC sensors to pad of participants non-dominant hand
 - d. Place EMG floating sensors on trapezoids
 - e. Place ground sensor between trapezoids
 - f. Attach headband to participants head

- g. Assess for comfort, affix wires to clients clothing with tape as needed – shoulder, collar of shirt – maybe need to ask client to loosen their shirt to gain access to shoulders
3. In BioTrace, start Perry Protocol by pressing “continue”
4. Window will pop up, asking you to select a client name
 - a. Click “add new”
 - b. Enter Client ID into sections for both first name and client ID
 - c. Also enter Sex and First Visit (Today’s date)
 - d. Press ok
 - e. Press continue in small window
5. System will check for signal
 - a. Ensure that NeXus is turned on from button on the top
 - b. NeXus automatically turns off to save power
 - c. May need to ask client to check for the light (it will be in their lap) and may need to ask client to press button to turn on
 - d. BioTrace will alert you if it is not connecting
6. Screen will reiterate instructions for inputs, double check input connections, press “continue”
7. Next screen allows for connection checks
 - a. EMG – 10 or below
 - b. SC – variable
 - c. Heart rate – normal rate, 70-120bpm
 - d. Adjust as needed
 - e. Press continue to begin recording

Stress Test

1. Explain to participant that they will be engaging in a short exercise used for comparison
 - a. Tell client “We will first record for two minutes where you are relaxing, followed by two minutes where I will give you instructions and you will look at the big screen. We will end with 4 minutes of rest. So for the next 2 minutes, just relax.”
 - i. Protocol should be automatically start, and will run automatically through exercise and baseline
 - ii. Exist test, saving file as: Baseline and participant ID, (ex. A1Baseline, A2Baseline, etc)

CMC

1. Ensure that program is signed in and that chat invitation has been accepted and window is open

2. Explain to participant that they will now be discussing the first topic with their partner using an instant messaging program
 - a. Explain how program is used, how messages are sent
 - b. They will have 15 minutes to discuss the *first topic only*
 - i. Explain to the participant to try to stay on topic, remind participant that they do not need to come to an agreement
 - ii. To discuss the topic as they normally would, the more authentic the better
 - iii. Assistant will signal when to begin and end discussion
 - iv. Participant will stay in the room with the participant during discussion to monitor connections
2. Explain that there will be 2 minutes recorded before conversation, 15 minutes of conversation, and 4 minutes for relaxation
3. In BioTrace, find CMC protocol by starting in main menu
 - a. Press “start”
 - b. Press “go to my protocols” at bottom of screen
 - c. Press CMC Protocol
 - d. Move through protocol into Signal Check, checking that connections are still good
4. Synchronize recording with other assistant
 - a. Assessments, hook ups up and previous tests may take different amounts of time for each participant
 - b. Use cell phones to coordinate the starting of CMC protocol, can call or text to coordinate when you press “continue” to begin
 - c. Press continue to begin recording
 - d. Verbally signal client when 15 minutes are up and ask them to please end conversation
5. Save file in BioTrace as participant ID + CMC (ex. A1CMC, B1CMC)

Post Assessment

1. Bring up communication satisfaction survey on desktop computer
2. Instruct participant to fill out survey based on the discussion that they just engaged in with their partner using online chatting program

Break

- Allow participants to walk around with their equipment attached, < 5 minutes
- Ensure that video cameras are ready, chairs are in correct placement and DVDs are ready to record
- Bring supplies and laptop from conference room back to lab

Face to Face

1. Direct clients to take seats in Lab
 - a. Double check connection of sensors, reconnect or apply new sensors if needed
2. Explain to clients that they will now be discussing the 2nd topic selected
3. Again ask clients to speak with one another as they normally would, try to stay on topic
 - a. May need to instruct clients to speak up to ensure that their voices are being recorded
4. Explain that there will be 2 minutes recorded before conversation, 10 minutes of conversation, and 4 minutes of relaxation
5. Start recording video
6. In BioTrace, in My Protocols, find FtF protocol, continuing through, checking connections and begin recording
 - a. Signal changing in segments – indicated by instructions on the laptop
7. Begin FtF
 - a. For second half of data collection, lab assistant will leave the lab during FtF discussion
 - b. Begin recording, and move laptops into the hallway, let participants know when 2 min baseline is over and close lab door
 - c. Enter the lab when 10 minutes has finished and instruct clients to relax for a few minutes
 - d. Return laptops to lab behind partition
8. Save recording in BioTrace as participant ID + FtF (1bFtF)
9. Stop video recording on DVD
10. Label each DVD
 - a. A = disc with both partners
 - b. A1 = female
 - c. A2 = male
 - d. Check mark = consent to use video for future research
 - e. + = includes post interview

Post Assessment

1. Have clients return to desktops used previously in protocol (one will need to return to the conference room)
2. Bring up FtF communication satisfaction survey
3. Instruct participant to fill out survey based on the discussion that they just engaged in with their partner face to face

Exit

1. Detach equipment carefully, assessing for comfort of participant
2. Debrief experience with all clients, ask if they have any questions or concerns, refer them to contact information on their copy of informed consent and UK Family Center referral

One assistant cleans up

- Discard used sensors
- Return NeXus with attached wires to lab
- refill pouch with new sensors, tape and cleansing pads
- Double check that everything has been saved
- Shut down computers and screens of desktops and laptops
 - Only log out MFT user from conference room
- Make sure that envelope is in file cabinet

One (or both) assistant conducts Post-Interview

1. Instruct participants to take seats in lab
2. Restart video recording on DVD
3. Using interview guide, ask participants about experience of conversations in different environments
 - a. Guide direction of conversation using outline, but allow for conversation to flow and ask follow up questions or for more detail
 - b. Research assistants should be informed by research questions and hypothesis
 - i. *Research Question:* How does a participant's usage and perception of CMC influence communication satisfaction and communication experience in CMC versus FtF environments?
 - ii. H1: There will be a positive correlation between use of CMC and levels of satisfaction after the CMC condition
 - iii. H2: There will be a positive correlation between perceptions of CMC use and levels of satisfaction after the CMC condition
 - c. Time conversation for 10 minutes
 - d. Stop recording video on DVD

- e. Remove DVD (ensure that it has been labeled with client ID), store in Jewel Case and place in file cabinet

After completion of protocol and interview make sure that:

Envelope with documents is stored in file cabinet

DVD is labeled and placed in the file cabinet

Both NeXus are placed in lab ready for next session

Laptops are turned off and returned to Lab ready for next session

Use gray remote to turn off monitors of screens behind partition

Screens are turned off and computers are shut down

Computer in Conference room is logged out of #####

File cabinet is locked

Posted client ID sheets have been marked off

Interview Script

1. What was this experience like for you?
2. Did you have a preference for one mode of communication? Why?
3. What aspects of the environments were helpful? Difficult?
4. Would you typically use CMC for this type of a discussion? Why or why not?
5. What factors influence your use of CMC for communication with your partner?
6. Was this simulation realistic to how you would normally communicate FtF or with CMC?
7. Can you think of any reasons why it would be helpful to use CMC? Why it would be harmful? Do you have any experiences with either?

APPENDIX C

Demographic Survey

Demographics

Please answer the following demographic questions.

1. Gender

Male_____ Female_____

2. Age_____

3. Racial or ethnic heritage

- a. European American (Caucasian)
- b. Hispanic/Latino
- c. African-American (Black)
- d. Asian/Pacific Islander
- e. Native American
- f. Other or Combination please specify_____

4. Highest level of education

- a. No formal schooling
- b. 8th grade or less
- c. Some high school
- d. High school graduate or GED
- e. 2 year college, some college, technical degree, associate's degree
- f. Bachelor's degree
- g. Graduate degree

Please circle the answer that best describes you.

5. What is your current romantic relationship status?

- a. In a serious relationship
- b. Engaged
- c. Married

6. What is your current marital status?

- a. Never married
- b. Married
- c. Divorced
- d. Remarried
- e. Widowed

7. How long have you been in your current relationship?

- a. 1-2 months
- b. 3-6 months
- c. 7-12 months
- d. over a year-2 years
- e. more than 2 years

8. How often do you see your romantic partner?

- a. Every day
- b. 3-6 days a week
- c. One or two days a week
- d. Less often than once a week

5. Are you currently living with your romantic partner?

No_____

Yes_____

APPENDIX D

Familiarity with and Use of CMC Assessment

Adapted from (Spitzberg, 2006) CMC Competence measure (version 5)

	Not at all true of me	Mostly not true of me	Neither true nor untrue of me; undecided	Mostly true of me	Very true of me
1. I am very knowledgeable about how to communicate through computers.**					
2. I am never at a loss for something to say in CMC.**					
3. I am very familiar with how to communicate through email and the internet**.					
4. I always seem to know how to say things the way I mean them using CMC.**					
5. When communicating with someone through a computer, I know how to adapt my messages to the medium.**					
6. I rely heavily upon my CMCs for getting me through each day.**					

7. I can rarely go a week without any CMC interactions.**					
8. I am a heavy user of computer-mediated communication.* *					
9. If I can use a computer for communicating, I tend to.**					

Note. ** indicates items selected for use in scale for analysis

APPENDIX E

Perceptions of CMC Assessment

Sections taken from (Spitzberg, 2006) CMC Competence measure (version 5)

Please answer the following questions based on the use and nature of you and your romantic partner's Computer-Mediated Communication (CMC), including text messages, chatting and e-mails.

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. I feel that CMC hinders or would hinder communication with my partner**				
2. My preference is to use CMC sparingly with my partner**				
3. When debating or discussing an issue of contention, I sometimes like to use CMC as a method of communication				
4. When communicating with my partner using CMC, I sometimes feel misunderstood				
5. I prefer to use CMC to discuss an important issue on which my partner and I have differing opinions				
6. My partner and I have more productive conversations when using CMC				
7. I have a negative perception of using CMC to communicate with others**				
8. I use CMC to reiterate or clarify a point made during a face to face or phone conversation				
9. I have a positive attitude about using CMC**				
10. I enjoy communicating using computers.**				
11. I am nervous about using the computer to communicate with others.**				
12. I look forward to sitting down at my computer to write to others.**				
13. I am motivated to use computers to communicate with others.**				

Note. ** indicates items selected for use in scale for analysis

APPENDIX F

Communication Satisfaction Assessment

Hecht's Items (1978)

	Strongly Disagree (1)	Disagree	Somewhat Disagree	Neutral	Some what Agree	Agree	Strongly Agree (7)
1. The other participant let me know I was communicating effectively							
2. I would like to have more discussions like this one							
3. I am very dissatisfied with the communication							
4. I felt that during the conversation I was able to present myself as I wanted the other person to view me							
5. The other participant showed that they understood what I had said							
6. I was very satisfied with the communication**							
7. The other participant expressed a lot of interest in what I had to say**							
8. I did NOT enjoy the conversation**							
9. I felt I could talk about anything with the other participant							
10. We each got to say what we wanted**							

11. I felt that we could laugh together easily							
12. The conversation flowed smoothly**							
13. The other participant changed the topics when their feelings were brought into the conversation							
14. The other participant frequently said things which added little to the conversation							
15. We talked about things that I was not interested in							

Note. ** indicates items selected for use in scale for analysis

Jarboe's items (1988)

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
16. I felt free to participate in this discussion							
17. I felt relaxed and comfortable with this partner							

Items develop by present study's author (Martha Perry, 2009)

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
18. This mode of communication was efficient in helping us work on this task**							

19. I would recommend that others use this form of communication							
20. The mode of communication slowed us down							
21. I liked communicating with my partner this way**							
22. This mode of communication felt unnatural or artificial							
23. Using this method of communication for a discussion of this nature would be common for me and my partner							
24. During this discussion I wished that I could switch modes of communication to finish the conversation							

Note. ** indicates items selected for use in scale for analysis

APPENDIX G



Consent to Participate in a Research Study

Couple's Use and Experience of Communication in a Computer-mediated Environment

WHY ARE YOU BEING INVITED TO TAKE PART IN THIS RESEARCH?

You are being invited to take part in a research study about how a couple experiences communication when using technology to mediate communication. If you and your partner volunteer to take part in this study, you will be one of about 50 couples to do so at the University of Kentucky.

WHO IS DOING THE STUDY?

Martha Perry, a student researcher in the Department of Family Studies at the University of Kentucky, is in charge of this project. She is being guided in this research by the chair of the Family Studies Department, Ronald Werner-Wilson, Ph.D. There may be other people on the research team assisting at different times during the study.

WHAT IS THE PURPOSE OF THIS STUDY?

By doing this study, we hope to learn how an individual's usage and perception of computer-mediated communication influences communication satisfaction and communication experience in computer-mediated versus face to face environments. We also hope to learn how couple's experience computer mediated communication with their partner, and what factors they report influence their use.

ARE THERE REASONS WHY YOU SHOULD NOT TAKE PART IN THIS STUDY?

Reasons for being excluded from this study would include being under the age of 18, being single or not being able to attend as a couple, or having no previous experience using a basic computer-based chatting program.



WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST?

The research procedures will be conducted at the Family Interaction Research Lab located in 316 Funkhouser Building in the UK campus. Participants will need to visit this site only once, and the session will take about 2 hours.

WHAT WILL YOU BE ASKED TO DO?

You will answer some self-report questionnaires, participate in a short test where you watch a screen and say the name of colors, and will then communicate with your partner in both a face to face and online chatting context. You will be asked to choose two different topics to discuss such as vacation plans, household chores, carpooling, etc. Face to face communication will be video recorded and online chats will be logged. You will also be asked to evaluate your communication with your partner after each discussion. During the discussions we will also monitor how your body is responding. We will attach sensors to a few sites on your body and will be monitoring heart rate, muscle activity and skin conductance. These responses of the body will show your physiological arousal and experience of stress during the communication exercises. By chance, you may also be asked to participate in an interview about your experience following the discussions.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?

To the best of our knowledge, the things you will be doing have no more risk of harm than you would experience in everyday life. You may find some questions we ask you (*or some procedures we ask you to do*) to be upsetting or stressful. If so, we can tell you about some people who may be able to help you with these feelings.

WILL YOU BENEFIT FROM TAKING PART IN THIS STUDY?

There is no guarantee that you will get any benefit from taking part in this study. However, some people have experienced some level of understanding of their partner and problem solving as a result of spending time discussing issues with their partner. Your willingness to take part, however, may, in the future, help society as a whole better understand this research topic.

DO YOU HAVE TO TAKE PART IN THE STUDY?

If you decide to take part in the study, it should be because you really want to volunteer. You will not lose any benefits or rights you would normally have if you choose not to volunteer. You can stop at any time during the study and still keep the benefits and rights you had before volunteering.

IF YOU DON'T WANT TO TAKE PART IN THE STUDY, ARE THERE OTHER CHOICES?

If you do not want to be in the study, there are no other choices except not to take part in the study.

WILL YOU RECEIVE ANY REWARDS FOR TAKING PART IN THIS STUDY?

Each couple will receive \$75 for taking part in the communication portion of this study and an additional \$25 incentive will be given to those couples randomly chosen to complete an interview.

WHO WILL SEE THE INFORMATION THAT YOU GIVE?

We will make every effort to keep private all research records that identify you to the extent allowed by law.

Your information will be combined with information from other people taking part in the study. When we write about the study to share it with other researchers, we will write about the combined information we have gathered. You will not be personally identified in these written materials. We may publish the results of this study; however, we will keep your name and other identifying information private.



We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information, or what that information is. All information obtained from your participation including questionnaire responses, video tapes, and physiological arousal measures will be stored on a locked computer in a locked office.

It is typical that after the completion of a study, video recordings be deleted. However, with plans for future research projects it would be helpful to retain these recordings for future use by faculty and students in the Family Studies Department. We are requesting that participants indicate if they would be willing to allow for video recordings of their conversations to be retained for future research purposes. All future research in which these videos would be used will be subject to approval by the IRB at the University of Kentucky prior to use. This option is voluntary and will not influence participation or compensation for the present study.

Please indicate whether or not your videotape can be stored for future research. Initial your choice:

_____ You elect to allow researchers to keep your videotape for future testing.

_____ You ask that your videotape be destroyed at the end of this study.

CAN YOUR TAKING PART IN THE STUDY END EARLY?

If you decide to take part in the study you still have the right to decide at any time that you no longer want to continue. You will not be treated differently if you decide to stop taking part in the study.

The individuals conducting the study may need to withdraw you from the study. This may occur if you are not able to follow the directions they give you, if they find that your being in the study is more risk than benefit to you.

WHAT IF YOU HAVE QUESTIONS, SUGGESTIONS, CONCERNS, OR COMPLAINTS?

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions, suggestions, concerns, or complaints about the study, you can contact the investigator, Martha Perry at 859-257-5527. If you have any questions about your rights as a volunteer in this research, contact the staff in the Office of Research Integrity at the University of Kentucky at 859-257-9428 or toll free at 1-866-400-9428. We will give you a signed copy of this consent form to.

Signature of person agreeing to take part in the study

Date

Printed name of person agreeing to take part in the study

Name of [authorized] person obtaining informed consent

Date

APPENDIX H

Semi-Structured Post Interview

1. What was this experience like for you?
2. Did you have a preference for one mode of communication? Why?
3. What aspects of the environments were helpful? Difficult?
4. Would you typically use CMC for this type of a discussion? Why or why not?
5. What factors influence your use of CMC for communication with your partner?
6. Was this simulation realistic to how you would normally communicate FtF or with CMC?
7. Can you think of any reasons why it would be helpful to use CMC? Why it would be harmful? Do you have any experiences with either?

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Vita

Martha S. Perry was born July 19, 1985 in Omaha, NE.

EDUCATION

Virginia Polytechnic Institute and State University (Virginia Tech)
B.S. in Sociology and B.S. in Human Development, (dual degrees) – 2007

Certified Family Life Educator (CFLE), provisional status

PROFESSIONAL EXPERIENCE

Bluegrass Healthy Marriage Initiative
Research assistant, 08/2008 - 06/2010

Department of Family Studies, University of Kentucky
Research assistant, 08/2008 – 08/2010
Teaching assistant, 12/2008 – 1/2009

University of Kentucky Family Center
Marriage and Family Therapist Intern, 08/2008 - 05/2010

SCHOLASTIC & PROFESSIONAL HONORS

Mildred Sinclair Lewis Scholarship, 2009-2010
Department of Family Studies 2010 Graduate Student of Excellence

SCHOLARLY ACTIVITIES

Perry, M. S., Wood, N. D., & Werner-Wilson, R. J. (2009, October). *What Predicts Marital Satisfaction for Military Couples?* Poster presentation at the annual meeting of the American Association for Marriage and Family Therapy, Sacramento, CA.

White, C., & Perry, M. (2009, July). *Domestic Violence: An Overview*. Presented to Bluegrass Healthy Marriage Initiative Partners.

Brock, G.W., Michaels, M., Perry, M., & Palagyi, L. (2008, November). *Revision of the Ethics At-Risk Test*. Poster presentation at the annual meeting of the American Association for Marriage and Family Therapy, Memphis, TN.

PROFESSIONAL MEETINGS & WORKSHOPS

Kentucky Association for Marriage and Family Therapy (KAMFT) Conference.
Louisville, KY, 2010.

American Association for Marriage and Family Therapy (AAMFT) National Conference,
Sacramento, CA, 2010 and Memphis, TN, 2009.

Smart Marriages Conference, Orlando, FL, 2009.

Prevention and Relationship Enhancement Program (3-day workshop). July 2009.
Orlando, FL.

Professional Biofeedback Certificate Program (5-day training), August 2009, Oakland,
CA

PROFESSIONAL ORGANIZATIONS

American Association for Marriage and Family Therapy (AAMFT)

Kentucky Association for Marriage and Family Therapy (KAMFT)

National Council on Family Relations (NCFR)

University of Kentucky Student Association for Marriage and Family Therapy (SAMFT)