# THE EFFECT OF SENTIMENT AND MEDIA SYNCHRONICITY ON ATTRIBUTIONS IN COMPUTER-MEDIATED CONFLICT

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#### ABSTRACT

## THE EFFECT OF SENTIMENT AND MEDIA SYNCHRONICITY ON ATTRIBUTIONS IN COMPUTER-MEDIATED CONFLICT

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In an experiment, this study investigated the moderating effect of pre-interaction relational satisfaction and media (a)synchronicity on the relationship between conflict behaviors and attributions among romantic couples. The study hypothesized that individuals who have greater pre-interaction relational satisfaction make more relationally enhancing attributions regarding their partners' conflict behaviors than do individuals who have less pre-interaction relational satisfaction. It was also predicted that media asynchronicity (vs. synchronicity) decreases the rate at which individuals who have less relational satisfaction make relationally diminishing attributions regarding their partners' conflict behaviors. A pre-interaction questionnaire measured participants' relational satisfaction. Romantic couples then engaged in an online conflict discussion using synchronous or asynchronous computer-mediated communication (CMC). After engaging in the online conflict discussion, participants completed a postinteraction questionnaire that assessed their attributions for their partners' conflict behaviors. The results revealed one of the predicted attribution patterns: individuals who had greater preinteraction relational satisfaction made more dispositional attributions for their partners' increasing positive conflict behaviors and less dispositional attributions for their partners' decreasing positive conflict behaviors, whereas individuals who had less pre-interaction relational satisfaction made less dispositional attributions for their partners' increasing positive conflict behaviors and more dispositional attributions for their partners' decreasing positive conflict behaviors. Media asynchronicity, however, had no influence on individuals' attributions

for their partners' behaviors. Therefore, pre-interaction relational satisfaction appears to be the best predictor of individuals' attributions for their partners' conflict behaviors.

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## KEY TO ABBREVIATIONS

APIMoM	Actor-partner Interdependence Moderation Model
CFA	Confirmatory Factor Analysis
СМС	Computer-mediated Communication
DIS	Dispositional Attributions
EFA	Exploratory Factor Analysis
FtF	Face-to-face
ICC	Intraclass Correlation
MED	Media Attributions
ML	Maximum Likelihood Estimation
MLM	Multilevel Modeling
RMSEA	Root Mean Square Error of Approximation
SAT	Pre-interaction Relational Satisfaction
Skew	Skewness Statistic
SPAFF	Specific Affect Coding System
α	Alpha Probability of Type I Error
b	Regression Coefficient (Unstandardized)
ß	Beta Regression Coefficient (Standardized)
β	Beta Probability of Type II Error
$1 - \beta$	Power (1-Beta)
df	Degrees of Freedom
$\eta^2$	Eta Squared Effect Size

Est.	Parameter Estimate
LL	Lower Limit Confidence Interval
М	Mean
Min	Minimum Value
Max	Maximum Value
Ν	Sample Size
$R^2$	Coefficient of Multiple Determination
SD	Standard Deviation
SE	Standard Error
UL	Upper Limit Confidence Interval

#### CHAPTER 1

Considering the rapid spread of technology over the years and its pervasiveness in our everyday lives, it is not surprising that computer-mediated communication (CMC) plays an integral role in our interpersonal relationships. Not only do Americans use the Internet frequently, but also they use it for relational maintenance (i.e., keeping a relationship in existence). In a national survey regarding Internet use, 67% of adults reported that using the Internet to communicate with family and friends has strengthened those relationships (Fox & Rainie, 2014). Another national survey found that romantic couples also use the Internet for relational maintenance, as 21% of couples in committed relationships reported feeling closer to their spouse or partner because of online or text message exchanges, and 23% of couples ages 18-29 reported resolving conflict that they could not resolve face-to-face (FtF) either by text message or by online communication (Lenhart, 2014).

Individuals use their mobile and smart phones for many of these same relational maintenance functions (Pew Internet & American Life Project, 2014). Eighty-one percent of adults have reported using their phones to send or receive text messages with friends, family, and romantic partners, and 52% have reported using their phones to send or receive email with friends, family, and romantic partners (Duggan, 2013).

The focus of this research is to look at one aspect of relational maintenance: how couples manage conflict in CMC. To date, scholars have not attended to the increasing use of communication technology in interpersonal conflict. This is an important topic to study, as interpersonal conflict is common in close relationships. Moreover, whether individuals manage conflict constructively or destructively impacts their relational stability, satisfaction, and health. A review of 64 empirical studies has shown that couples who handle conflict destructively by

expressing negative conflict behaviors, such as contempt and criticism, rather than handle conflict constructively by engaging in positive conflict behaviors, such as humor and affection, have poorer mental and physical health (Kiecolt-Glaser & Newton, 2001). Couples use CMC in conflict yet little is known about it. This study addresses this gap by invoking and synthesizing several previously unconnected theoretical frameworks to understand this new phenomenon. Specifically, it investigates how the nature of relationships and aspects of CMC can help or hinder conflict management among romantic couples.

It is possible that both the quality of relationships, and features of communication media can affect the attributions that individuals make for their partners in interpersonal interactions. For instance, research has shown that there is a strong association between individuals' relational satisfaction and the attributions that they make for their partners' conflict behaviors (Fincham, Harold, & Gano-Phillips, 2000). Research has also shown a strong association between individuals' relational satisfaction and the appraisals they make regarding their partners' supportiveness during conflict (Scissors, 2013). Individuals' satisfaction not only influences their attributions and appraisals of their partners' conflict behaviors but also influences their postconflict relational satisfaction (Fincham et al., 2000; Scissors, 2013). Furthermore, research has shown that individuals' biased (vs. accurate) perceptions of their partners' conflict behaviors (e.g., as a negative conflict engager rather than a positive problem solver) is associated with their own relational satisfaction (Segrin, Hanzal, & Domschke, 2009). This literature suggests that individuals' relational satisfaction is an important predictor of the attributions that they make for their partners' conflict behaviors and their overall relational satisfaction.

In addition to studying the impact of relational satisfaction on the attributions that individuals make regarding their partners' conflict behaviors, this research also examines if asynchronous CMC (mediated communication that is not in real time) moderates the attributions that individuals make for their partners' conflict behavior. At present, the literature offers no clear predictions regarding the influence of media synchronicity (asynchronous or synchronous CMC) on interpersonal attributions. On the one hand, asynchronous CMC generally has been found to have a negative impact on most relational and performance outcomes (Moon, 1999; Roseth, Saltarelli, & Glass, 2011; see Walther, 1996 for exceptions). Likewise, media synchronicity theory posits that asynchronous CMC should not be used in communication processes that require negotiating meaning, such as conflict, unless there is a high degree of familiarity between partners (Dennis, Fuller, & Valacich, 2008). On the other hand, metaanalytic research in the negotiation domain suggests that asynchronous CMC may be beneficial in online conflict due to its disruptive nature. The disruptiveness of asynchronous CMC may be enough to offset the effect of couples' negative sentiment towards each other and lead to a positive pattern of attributions (Swaab, Galinsky, Medvec, & Diermeier, 2011). Therefore, it is important to test these competing predictions regarding the moderating impact of media synchronicity on individuals' attributions for their partners' conflict behaviors, as individuals' attributions influence their overall relational satisfaction, stability, and well-being (e.g., Bradbury & Fincham, 1990; Canary, Cupach, & Serpe, 2001).

The next chapter provides a review of the interpersonal conflict literature and the CMC synchronicity literature. After the literature review, three hypotheses are stated, followed by the details of an experiment that tested these hypotheses, the results of the experiment, and the implications of these results.

#### CHAPTER 2: LITERATURE REVIEW

This chapter reviews relevant conflict, attribution, and synchronicity literature to provide the background necessary to understand the way that CMC may complicate attributions about romantic partners' conflict behaviors. As stated, interpersonal conflict is an important topic to study in CMC because romantic couples use CMC to discuss conflict. Also, the way with which people handle conflict has a significant impact on people's mental and physical health (Choi & Marks, 2008; Kiecolt-Glaser & Newton, 2001; Whisman, 2007). Engaging in negative conflict behaviors, such as anger, belligerence, and disgust, rather than positive conflict behaviors such as humor, interest, and validation, increases individuals' risk for disease and illness, such as a heart attack, heart disease, kidney damage, disability, depression, etc. (Appleberg, Romanov, Heikkila, Honkasaol, & Koskenvuo, 1996; Carels, Sherwood, & Blumenthal, 1998; Keefe et al., 1999; Levenson, Carstensen, & Gottman, 1993; Waltz, Kriege, & Bosch, 1998; Williamson, Robinson, & Melamed, 1997). Therefore, it is important to investigate the factors by which partners experience positive and negative outcomes in conflict, as these factors have a significant impact on individuals' physical, mental, and relational health.

#### **Definition of Conflict**

There are many definitions of conflict, but what is conceptually consistent across them is a statement about incompatibility, interdependence, and interaction. For example, Mortensen (1974) defined conflict as "An expressed struggle over incompatible interests in the distribution of limited resources" (p. 93). Hocker and Wilmot (1978) defined conflict as "An expressed struggle between at least two interdependent parties who perceive incompatible goals, scarce resources, and interference" (p. 9). And, Folger, Poole, and Stutman (2005) defined conflict as "The interaction of interdependent people who perceive incompatibility and the possibility of interference from others as a result of this incompatibility" (p. 4). For the purpose of this study, conflict is defined as the interaction of interdependent people who have or perceive incompatibility. Incompatibility refers to a perceived disagreement, which is common among romantic partners, as the closer people are, the more time they spend together, and the more opportunity they have to argue about issues. Interdependence occurs when people rely on each other to achieve outcomes, such as affection, support, and mortgage or rent payments. And interaction emphasizes the importance of communication in conflict, as people exchange messages when they interact.

#### **Sentiment Override**

Weiss (1980) invented the concept of sentiment override. Sentiment override predicts that individuals use different patterns of attributions (i.e., causal inferences individuals make regarding another's behavior) to explain their partners' conflict behaviors. Sentiment override occurs when individuals' positive or negative sentiment towards their partners affects their perception and/or interpretation of their partners' behaviors, and influences the attributions that they make to explain their partners' behavior. Weiss defined positive sentiment as "The love, regard, and fulfillment promised by relatedness; [in that] each partner is buoyed by the promise of unconditional positive regard—that one is non-contingently worthwhile in the eyes of the other" (p. 243). In other words, positive sentiment refers to couples' unconditional positive perception of their partner and their relationship, and negative sentiment refers to couples' negative perception of their partner and their relationship. Weiss predicted that couples make attributions for their partners' behaviors based on their sentiment for their partner. For example, if a wife believes that her husband is caring (positive sentiment), when the two engage in a conflict discussion and the husband expresses negative conflict behaviors, or withdraws from the

conflict, the wife (due to her positive sentiment towards her husband) is likely to attribute her husband's behavior to situational factors, such as stress or having a bad day. Whereas, if a wife believes that her husband is cold and uncaring (negative sentiment), when the pair experiences conflict and the husband uses negative conflict behaviors, or withdraws from the conflict, the wife is more likely to attribute her husband's behavior to dispositional factors, such as his inconsiderateness and insensitivity. According to sentiment override, this is because individuals who have positive sentiment for their partners tend to perceive their partners' negative behaviors as more situationally based than they really are, tend not to take their partners' negativity personally, and tend to make situational attributions for their partners' negative behaviors (e.g., s/he is having a bad day). Conversely, individuals who have negative sentiment for their partners tend to perceive their partners' neutral and positive behaviors as negative, tend to take their partners' negativity personally, are overly sensitive for put downs, and tend to make dispositional attributions for their partners' perceived negative behaviors (e.g., s/he is cruel). According to Weiss, couples who have a strong friendship base are believed to be automatically in positive sentiment override, and couples who do not have a strong friendship base are believed to be automatically in negative sentiment override. The present study seeks to extend previous work on sentiment override by testing its effect in CMC.

Multiple studies have shown that individuals who are satisfied in their relationships tend to interpret their partners' behaviors positively while those who are not satisfied in their relationships tend to interpret their partners' behaviors negatively (e.g., Denton, Burleson, & Sprenkle, 1994; Hawkins, Carrere, & Gottman, 2002; Robinson & Price, 1980). For instance, in one of the first studies that demonstrated positive and negative sentiment override, Robinson and Price (1980) trained independent coders to observe married couples in their homes, and to

identify and record couples' positive behaviors (e.g., attending, approval, concern, and humor). Robinson and Price trained married couples to identify and record their partners' positive behaviors as well. The results revealed that when couples were satisfied in their marriages, there was almost 100% agreement between the couples' ratings of their partners' positive behaviors toward them and the observers' ratings of their partners' positive behaviors. But when couples were not satisfied there was only 50% agreement between the couples' ratings of their partners' positive behaviors toward them and the observers' ratings of their partners' positive behaviors. Partners who were not satisfied in their relationships only reported half of their partners' positive behaviors toward them. This research emphasizes the notion that sentiment towards one's partner influences one's perception of his/her partner's behaviors.

Subsequent research has provided additional support for the sentiment override concept (Weiss, 1980). Notarius, Benson, Sloan, Vanzetti, and Hornyak (1989) found that wives who were in distressed rather than non-distressed marriages were more likely to perceive their husbands' neutral and negative conflict behaviors (as rated by independent coders) as primarily negative and offer negative replies as a result. Other research has shown that wives who had low relational satisfaction rated their husbands' negative conflict behaviors, such as expressing anger and domination, as negative emotions; whereas wives who had high relational satisfaction rated these same negative conflict behaviors as neutral emotions (Hawkins, Carrere, & Gottman, 2002). Again, these studies suggest that couples' sentiment towards their partners leads to biased perceptions of their partners' behaviors.

#### The Effect of Sentiment Override on Attributions

In addition to the proposition that couples' sentiment towards their partners influences biased perceptions of their partners' behaviors towards them, sentiment override predicts that

individuals use different patterns of attributions (i.e., causal inferences individuals make regarding another's behavior) to explain their partners' behaviors. In attribution theory and in most research there are two attributions that are believed to be the most commonly used by individuals (Fiske & Taylor, 2013). These include dispositional and situational attributions. Dispositional attributions occur when individuals attribute their partners' conflict behavior to a stable personality trait ("My partner's behavior reflects who s/he is"). Situational attributions occur, on the other hand, when individuals attribute their partners' behavior to contextual factors ("My partner's behavior was mostly shaped by the environment"). Attribution theory is credited to Heider's (1958) writings on naïve or commonsense psychology (Fiske & Taylor, 2013). Subsequent theorists extended this work to explain the attribution process using synonymous terms such as internal or dispositional attributions and external or situational attributions (e.g., Jones & Davis, 1965; Kelley, 1967).

What is conceptually consistent across the literature is the idea that the attribution process begins by interpreting information about others' behavior and the circumstances by which that behavior occurs to form an attribution. In general, attribution models suggest that individuals use as much information in the environment as possible to make sense of their partners' behaviors in order to assign cause to these behaviors (see Kelley & Michela, 1980 for review). Extensive research has been conducted on the psychological processes that underlie how people explain others' behavior. Such research has largely been guided by theories such as the correspondent inference theory (Jones & Davis, 1965) and the covariation model (Kelley, 1967), as well as other principles such as the salience principle (Taylor & Fiske, 1975).

Applied to this study, Weiss (1980) predicted that couples make attributions for their partners' behaviors primarily based on perceived spousal sentiment. That is, whether one

believes his/her partner is caring or not determines whether one makes relationally enhancing or diminishing attributions for their partners' behaviors. A number of studies support the proposition that the nature of couples' relationships influences the attributions that they make for their partners' behaviors towards them. For instance, a study by Fletcher et al. (1987) found that the greater relational happiness, commitment, and love individuals reported for their dating partners, the more dispositional attributions they made for their partners' positive behaviors (e.g., being cheerful and providing emotional support), and the less dispositional attributions they made for their partners' negative behaviors (e.g., being critical or complaining). Conversely, the less relational happiness, commitment, and love individuals reported for their partners, the less dispositional attributions they made for their partners' positive behaviors (e.g., providing emotional support), and the more dispositional attributions they made for their partners, the less dispositional attributions they made for their partners' positive behaviors (e.g., being cheerful, providing emotional support), and the more dispositional attributions they made for their partners' negative behaviors (e.g., being critical or complaining). Couples also attributed the stability of their happy relationships to dispositional rather than situational factors (e.g., partner's car, money, friends).

A review of 23 empirical studies showed a similar relationship between married couples' satisfaction and the attributions they made for their partners' negative and positive behaviors (Bradbury & Fincham, 1990). The results revealed that couples who were in distressed marriages with little to no relational satisfaction were more likely to make situational attributions for their partners' positive behaviors, whereas couples who were in non-distressed marriages with high relational satisfaction were more likely to make dispositional attributions for their partners' positive behaviors.

Another study by Floyd and Voloudakis (1999) looked at the attributions that friends made for their partners' unexpected change in affection towards them in an everyday

conversation about their friendship. The results revealed that the pre-interaction intimacy that friends felt for one another moderated the attributions that participants made in response to their friends' unexpected decrease in affection. The closer friends were, and the more positively they viewed their friends, as honest, cooperative, and kind, the more situational rather than dispositional attributions they made regarding their partners' unexpected decrease in affection. Together, these studies emphasize the importance of positive and negative sentiment on individuals' perceptions of their partners' behaviors as well as the attributions that they make to explain their partners' behaviors. With this in mind, the following hypotheses are proposed:

H1: Pre-discussion relational satisfaction moderates individuals' attributions for their partners' positive online conflict behaviors.

H1a: Individuals who have greater pre-discussion relational satisfaction make more dispositional attributions for their partners' positive conflict behaviors than do those who have less pre-discussion relational satisfaction.

H1b: Individuals who have greater pre-discussion relational satisfaction make less situational attributions for their partners' positive conflict behaviors than do those who have less pre-discussion relational satisfaction.

H2: Pre-discussion relational satisfaction moderates individuals' attributions for their partners' negative online conflict behaviors.

H2a: Individuals who have greater pre-discussion relational satisfaction make less dispositional attributions for their partners' negative conflict behaviors than do those who have less pre-discussion relational satisfaction.

H2b: Individuals who have greater pre-discussion relational satisfaction make more situational attributions for their partners' negative conflict behaviors than do those who have less pre-discussion relational satisfaction.

In recent CMC studies, researchers have explored whether people focus situational attributions on the communication media enveloping social interactions (e.g., Jiang et al., 2011). Media attributions occur if individuals explain their partners' behaviors due some facet of the online environment. The salience principle suggests that individuals attribute their partners' behavior to the cause that takes up the most space in their perceptual field (i.e., the cause that is the most noticeable) at the time individuals are asked to explain their partners' behaviors (Taylor & Fiske, 1975). The salience principle is evident in research that has shown individuals in getting acquainted conversations tend to attribute their own and their partners' behaviors to their partner ("My partner made me act that way" and "My partners' personality made him/her act that way") rather than to the general situation itself ("My partner acted that way because of the setting"). In line with the salience principle, individuals attributed their partners' behaviors to their partners because they comprised the most space in their visual field (Robins, Mendelsohn, & Sprenca, 1996). Applied to this study, it is possible that individuals may attribute their partners' online conflict behavior to the media environment, rather than to the general situation, if this is where most of their attention is focused during the interaction. This may be apparent in the asynchronous condition where technology was expected to be distracting. As a relatively new construct, it is uncertain whether or not individuals experience media attributions alternatively to general situational attributions or together with (i.e., in addition to) general situational attributions. This question will be addressed in the Method and Results sections of this study.

#### The Effect of Sentiment Override and Media Synchronicity on Attributions

The next hypotheses consider the effect of the technological aspect of media synchronicity on individuals' attributions for their partners' negative conflict behaviors. Specifically, the next hypotheses concern whether asynchronous CMC moderates the attributions that individuals make for their partners' negative conflict behaviors.

Little is known about the potential moderating effect of media synchronicity in conflict. Media synchronicity refers to the extent to which a medium enables individuals to achieve synchronicity, or "a state in which actions move at the same rate and exactly together...with a common focus" (Dennis, Fuller, & Valacich, 2008, p. 581). Most of the research that has been done regarding interpersonal conflict among romantic couples has examined the effect of communication channel alone on relational outcomes (e.g., CMC and FtF communication), rather than investigate the effect of the channel and its degree of synchronicity on relational outcomes separately. For instance, it is common for studies to collapse synchronous and asynchronous media into a single category of CMC (e.g., defining CMC as asynchronous discussion boards, asynchronous email, synchronous instant messaging, and synchronous video chat), overlooking any separate effects of media synchronicity. One experiment that investigated the effect of relational satisfaction and communication channel (synchronous instant messaging and synchronous FtF communication) on partner appraisals and satisfaction revealed that the communication channel had no effect on partner appraisals or satisfaction in conflict. Rather, relational satisfaction was the best predictor of partners' positive appraisals and post-conflict satisfaction outcomes (Scissors, 2013). This study suggests that the communication channel alone may not influence conflict outcomes, but it remains possible that media synchronicity (asynchronous CMC vs. synchronous CMC) might. Therefore, it is important to investigate the

potential effect of media synchronicity in conflict, as media synchronicity may have the potential to increase the quality of conflict outcomes, as it has been cited as a necessary component of communication effectiveness, relational, and performance outcomes (Dennis et al., 2008).

The effect of media synchronicity on conflict outcomes. The literature that looks at the effect of media synchronicity on relational and performance outcomes is helpful in extrapolating predictions about the moderating effect of media synchronicity on attributions. Research has generally depicted asynchronous media as having a negative impact on relational and performance outcomes. This is mostly attributed to asynchronous media's relative delay in information transmission between communicators. This delay can hinder the exchange of information required to reach an agreement in conflict and in similar situations. For instance, research on online collaboration has shown that temporal delays caused by asynchronous CMC not only impair group performance but also impair group relationships (see Gibson & Gibbs, 2006 for review). Likewise, one study that conceptualized media asynchronicity as a human response latency (as opposed to a delay due to computer speed) in which individuals collaborated in a problem-solving task with a confederate who responded with a short, medium, or long response delay, revealed a negative relationship between asynchronicity and persuasion, source credibility, and source knowledge (Moon, 1999). Other research that investigated conflict in an educational setting found that individuals who used synchronous versus asynchronous media to complete an assignment cooperated more, and felt more related to their partners (Roseth et al., 2011). This literature highlights the potential negative impact of asynchronicity on relational and performance outcomes. In other words, other things being equal, asynchronous CMC tends to have a deleterious effect on conflict.

Even so, incorporating the negative effect of asynchronous CMC with the sentiment override concept (Weiss, 1980), it is possible that positive sentiment may override the potential negative effect of asynchronous CMC's disruptive nature, and lead to a more positive pattern of outcomes. Other research among individuals who have relational history, as opposed to individuals who do not have relational history, has shown a positive effect of asynchronous CMC on relational and performance outcomes. This is evident in a study regarding the effect of relatedness (operationalized as friends who were related or strangers who were unrelated) and communication medium (FtF communication or phone or email) on performance outcomes in a negotiation context (McGinn & Keros, 2002). The results revealed that friends engaged in more cooperative behaviors, such as self-disclosure, honesty, and working together to find a mutually beneficial solution, than did strangers regardless of the communication medium. Moreover, friends who negotiated using email, an asynchronous form of CMC, engaged in more cooperative behaviors and achieved greater performance outcomes than did strangers who negotiated using email. This study suggests that friends' positive sentiment towards each other has the potential to override the disruptiveness of an asynchronous medium, and lead to positive outcomes.

In addition to friendship overriding the potential negative effect of using asynchronous CMC in conflict, meta-analytic research has shown that having a cooperative orientation toward one's partner can also override the disruptiveness of asynchronous CMC, and lead to positive outcomes in conflict. In a meta-analysis of 126 negotiation studies, Swaab et al. (2011) examined the effect of negotiators' orientation towards their partners (cooperative or non-cooperative orientation) and media synchronicity (asynchronous or synchronous channels) on performance outcomes, such as the amount of joint profit obtained and whether or not the negotiators reached

an agreement. Cooperative orientation refers to having high concern for others and self due to shared history or identity (e.g., friends, romantic partners, or group members), and noncooperative orientation refers to having high concern for only one's self due to being in competition with partners. The results revealed that negotiators who had a cooperative orientation towards their partners achieved greater performance outcomes than did negotiators who had a non-cooperative orientation towards their partners regardless of media synchronicity. That is, there was a main effect of cooperative orientation on performance outcomes. The results also revealed that there was an ordinal non-cooperative orientation x asynchronous media interaction on performance outcomes. Negotiators who had a non-cooperative orientation performed better when they used an asynchronous medium, than when they used a synchronous medium. Swaab et al. reasoned that this was because the asynchronicity of the medium reduced the rate at which negotiators received feedback from each other. Similar to the concept of negative sentiment override, Swaab et al. explained that negotiators who have a non-cooperative orientation tend to interpret their partners' behaviors to be more negative than they really are, e.g., as dominating and exploitative. As a result, negotiators with a non-cooperative orientation tend to perceive their partners' as hostile and reciprocate these behaviors with their own aggressive negotiation tactics. When this happens in a synchronous medium, as opposed to an asynchronous medium, the reciprocal and simultaneous feedback of negotiators' negative behaviors is believed to escalate the intensity of the conflict and results in poor performance outcomes. Together, this study highlights how positive sentiment towards partners has the potential to override a conflict situation, the disruptiveness of asynchronous media, and lead to positive outcomes. At the same time, this study also suggests that asynchronous media may be distracting enough to offset negative sentiment override.

Media synchronicity theory. The above studies suggest that positive sentiment towards partners may override the constraints of an asynchronous medium in conflict discussion and lead to positive outcomes. The above studies also suggest that negative sentiment towards partners may be offset by the disruptive nature of asynchronous CMC. These data are partly in line with media synchronicity theory (Dennis et al., 2008). Media synchronicity theory predicts that when the goal of a communication episode is to converge or to create shared meaning, as it often is in conflict, synchronous rather than asynchronous media is most effective. The theory argues effective communication is achieved when there is a good fit between the communication process (convergence rather than conveyance) and media synchronicity (synchronous rather than asynchronous medium). Convergence refers to transmitting "higher-level abstractions to existing mental models" (p. 581) to create shared meaning. Because the goal in convergence is to understand others' interpretation of information, rather than the information itself, the theory argues that it is beneficial to communicate using a medium with a high degree of synchronicity. This is due to the immediate interactive and back-and-forth nature required to negotiate a shared understanding. Conveyance refers to the transmission of a "large amount of raw information and subsequent retrospective analysis" (p. 581). In the case of conveyance, individuals do not need immediate feedback; they just need time to process the information on their own. There is less of a need to transmit and process information at the same time, and more of a need for independent thought.

Research has generally supported this proposition of media synchronicity theory. For instance, Murthy and Kerr (2003) investigated the interaction between communication process goals (conveyance or convergence) and communication mode (FtF or CMC) on performance outcomes. Murthy and Kerr found that individuals on teams who used FtF communication in a

problem-solving task that required convergent communication had higher performance levels than did individuals on teams who used CMC. They reasoned that this was because the problemsolving task required more convergence and as such a synchronous medium (FtF communication) rather than an asynchronous medium. Moreover, individuals on teams that used CMC in an idea generation task, in which information just needed to be conveyed, not converged, had higher performance levels than did individuals on teams who used FtF communication. Murthy and Kerr explained that this was because the idea generation task required more conveyance, and therefore an asynchronous medium was more effective than a synchronous medium. Although this study is confounded, as it does not differentiate the separate effects of communication mode (FtF or CMC) and media synchronicity, this research suggests that using a synchronous medium (FtF) to converge meaning, and a less synchronous medium (CMC) to convey ideas may lead to communication effectiveness. Still, it is unclear if the outcome is due to the medium or media synchronicity (cf. Dennis & Kinney, 1998).

Media synchronicity theory also argues that the context within which communication occurs moderates the need for conveyance or convergence communication processes, and therefore the need for high or low media synchronicity (Dennis et al., 2008). According to media synchronicity theory, familiarity with one's partner, the task, and the medium, moderates the amount of conveyance and convergence communication processes necessary for effective communication. The theory predicts that individuals who have a high degree of familiarity have the least need to use media with high synchronicity, whereas individuals who have a low degree of familiarity have the greatest need to use media that support high synchronicity. This is because individuals who are used to working with each other are assumed to have already developed a routine that guides the way that they communicate in various tasks that require both

conveyance and convergence processes. Applied to this study, couples' familiarity with each other may moderate, or lessen, their need to use media that support high synchronicity to discuss a conflict.

Consistent with media synchronicity theory, conflict may constitute a convergent communication process, as conflict resolution depends on reaching shared meaning. According to media synchronicity theory (Dennis et al., 2008), if the goal of communication were convergence, then a synchronous medium would be more effective than an asynchronous medium in conflict. At the same time, media synchronicity theory also predicts that familiarity may moderate the need for high or low media synchronicity. Therefore, couples who have positive sentiment towards their partners may be able to achieve similar relational outcomes regardless of the medium's synchronicity (due to their high level of familiarity). This is in line with the sentiment override concept (Weiss, 1980) and the above research that suggests positive sentiment towards partners can override the negative effect of asynchronous CMC's disruptiveness. It follows that individuals who have positive sentiment for their partners are likely to experience positive outcomes in conflict regardless of media synchronicity.

It is less clear what will happen to individuals who have negative sentiment for their partners and use asynchronous media in conflict, as theory and empirical evidence seem to be inconsistent. Sentiment override predicts that negative sentiment will lead to dispositional attributions about one's negative conflict behaviors regardless of media synchronicity. Media synchronicity theory (Dennis et al., 2008) predicts that synchronous CMC is necessary in convergent processes, such as conflict. But it also predicts that familiarity moderates the need for media synchronicity. If this is the case, then individuals with negative sentiment should experience the same outcomes regardless of media synchronicity because they are familiar with

one another, though they may not like each other. On the other hand, meta-analytic evidence in the negotiation domain suggests that asynchronous media may impact relational outcomes when individuals have negative sentiment towards partners rather than positive sentiment (Swaab et al., 2011). Together, it is possible that when individuals have negative sentiment towards partners, asynchronous media may provide an obstacle disruptive enough that it ends up offsetting the effect of negative sentiment override.

Consistent with the rationale for the first hypothesis, sentiment override predicts that individuals use different patterns of attributions to explain their partners' negative and positive behaviors in conflict. If individuals have positive sentiment for each other, then they tend to make more dispositional attributions for their partners' positive behaviors, and more situational attributions for their partners' negative behaviors. Whereas, if individuals have negative sentiment for each other, then they tend to make more situational attributions for their partners' positive behaviors, and more dispositional attributions for their partners' negative behaviors (Bradbury & Fincham, 1990; Fletcher et al., 1987; Floyd & Voloudakis, 1999). In line with the sentiment override concept, media synchronicity theory, and meta-analytic evidence, it is likely that individuals who have positive sentiment towards their partners will accrue a similar degree of situational and dispositional attributions for their partners' conflict behaviors regardless of media synchronicity. Conversely, individuals who have negative sentiment for their partners will accrue a different degree of attributions for their partners' negative conflict behaviors depending on media synchronicity. It is likely that individuals who use asynchronous CMC will make less relationally diminishing attributions due to the salience of asynchronous CMC's disruptiveness than will those who use synchronous CMC. Put simply, the disruptiveness of asynchronous CMC will override individuals' negative sentiment for each other, reducing the degree to which

individuals make relationally diminishing attributions for their partners' online conflict behaviors. Because individuals are more likely to make situational and dispositional attributions for their partners' negative behaviors, it is likely that this effect will occur in the presence of negative messages rather than positive messages (Floyd & Voloudakis, 1999). Therefore, the following hypotheses are proposed:

H3: CMC synchronicity moderates the effect of the interaction between pre-discussion relational satisfaction and negative conflict messages on attributions. (Three-way interaction).

H3a: In asynchronous CMC, individuals who have less pre-discussion relational satisfaction make more situational attributions for their partners' negative conflict behaviors than do those who use synchronous CMC.

H3b: In asynchronous CMC, individuals who have less pre-discussion relational satisfaction make less dispositional attributions for their partners' negative conflict behaviors than do those who use synchronous CMC.

#### **CHAPTER 3: METHOD**

#### **Research Overview**

The research manipulated or measured the following variables: media synchronicity, preinteraction sentiment, and conflict behaviors. For the experimental manipulation of media synchronicity, different individuals were randomly assigned to one of two media synchronicity conditions: asynchronous CMC or synchronous CMC. Pre-interaction questionnaires assessed individuals' degree of sentiment towards their partners. In the experiment, romantic couples discussed a current topic of disagreement in their relationship either using synchronous CMC or asynchronous CMC. To assess couples' conflict behaviors, the transcripts from the conflict discussion were coded for negative and positive conflict behaviors. After the conflict discussion, dyad members completed a post-interaction questionnaire that assessed the attributions individuals made regarding their partners' conflict behaviors.

#### **Participants**

Eighty-seven romantic couple dyads (N = 174) participated in the study. Dyads were comprised of 84 male-female couples and three female-female couples. Subjects' ages ranged from 18 to 54 years (M = 24.72, SD = 6.91). Participants were primarily Caucasian (59%), followed by African American (18%), Asian (8%), Hispanic (7%), Native American (1%), and Other (7%). Qualitative responses for other include mixed race, biracial, African American/White, Latin American, and Asian/White. The sample included both students (58%) and nonstudents (42%). Students were primarily enrolled in a 4-year college (41%), followed by graduate school (11%), or a 2-year college (4%). The largest proportion of participants had a degree from a 4-year college (31%), followed by a 2-year college (7%), a Masters program (3%), a Doctoral program (1%), or reported completing some college (44%) or some high school (1%). Couples' relationship length ranged from less than one year to 30 years (M = 3.66 years, SD = 5.05 years). The majority of participants had never been married (80%), or were married (18%), divorced (1%), or widowed (1%).

**Sample recruitment.** The study took place at a large, public university in the central United States. Couples were recruited to participate on the College of Communication Arts and Sciences' paid research pool website. The pool is open to the public. Couples were also recruited by placing ads on Craigslist, by posting flyers on public bulletin boards, and by a referral program. Individuals, who referred a couple, received \$20 per couple after the referred couple participated in the experiment. Couples received \$25 per hour and were compensated at the same rate if their session exceeded one hour. Couples who were referred to the study received an extra \$5 in addition to the \$25/hour they were paid for their participation; therefore, referred couples received \$30 per couple/per hour. The same language was used on all study advertisements.

Sample size and power analysis. An a priori power analysis was conducted using G\*Power (Faul, Erdfelder, Buchner, & Lang, 2009) to determine an adequate sample size to reduce Type II error. A power level  $(1 - \beta)$  of .80,  $\alpha = .05$ , and the average effect size Cohen's f = .29, was specified. G\*Power computes power using Cohen's f. The average effect size was taken from the interpersonal attribution and relational conflict literature that showed small to medium effect sizes for the relationship between relational satisfaction and attributions (e.g., Fincham, Harold, & Gano-Phillips, 2000; Woodin, 2011). G\*Power recommended a total sample size of N = 56. The final sample size, N = 174, met this requirement.

#### **Experimental Procedure**

All participants reported to a research lab where the researcher greeted them, thanked them for coming to the online interaction study, and showed each dyad member to a separate room with a computer in it. Participants were then directed to an online questionnaire. The questionnaire began with an informed consent form and a brief description of the study. Participants were informed that they would be having an online discussion regarding a mutually agreed upon topic of disagreement with their partner. They were also told that they would be asked to complete two questionnaires, one before and one after the discussion. If participants agreed to participate, they were given a unique subject ID and were instructed to complete the rest of the online questionnaire. The questionnaire assessed their current relational satisfaction and their use of communication technology in interpersonal conflict. After completing the questionnaire, participants were given a printed sheet of paper that prompted them to make a list of four topics that were a source of ongoing disagreement in their relationship. This prompt was adapted from previous research that has successfully induced conflict discussions in romantic dyads (Aftifi, Joseph, & Aldeis, 2012, Scissors, 2013). The prompt reads as follows:

You are about to have a discussion with your romantic partner online about a current topic of disagreement in your relationship. There are numerous topics that people tend to refrain from discussing (or avoid discussing) with their romantic partner because they are afraid that introducing the topic will produce an argument with their partner. In the space below, we would like you to write down four topics that tend to be conflict inducing, or that tend to create an argument, in your relationship (with the partner who is with you today). These should be topics that have been conflict inducing in the past or that are currently conflict inducing (rather than topics that have never been brought up that could produce conflict if introduced). If you can't think of four, write down as many as you can think of. Your partner will not see this list, and is being asked to make a similar list.

After participants completed their list of conflict-inducing topics, the researcher compared the lists, and selected a mutual topic that appeared on both partners' lists. If partners noted multiple mutual topics that were in different order, then the researcher chose the topic that had the least distance between topics on each partner's list. For example, if partner 1 listed money as topic #4 and kids as topic #2, and partner 2 listed money as topic #2 and kids as topic #1, then the topic of kids would be selected because it was closer on each partner's list (#2 and #1) in comparison to the topic of money (#4 and #2). If multiple topics were equal distance from each other then the researcher would randomly select one topic by flipping a coin. If dyads did not have any topics in common, then the researcher randomly selected one partner's list by flipping a coin and selecting the first topic on that list. This protocol was taken from similar relational conflict studies in which group comparisons between the outcome variables of couples who had a topic in common and couples who did not have a topic in common did not reveal any differences (Afifi et al., 2012; Scissors, 2013)<sup>1</sup>.

After the topic was chosen, the researcher let both dyad members know the topic that they were going to discuss with their partner. Dyad members were then directed to the email accounts that they used to communicate with their partners in the experiment (e.g., dyadmember1@gmail.com and dyadmember2@gmail.com). These email accounts were created solely for this study, and were not used outside of this experiment. Both members of the couple were then told that they would use their assigned email accounts to converse with their partners about their conflict topic. They were then given their partners' email address. Couples were also

<sup>&</sup>lt;sup>1</sup> Dyad topics were selected randomly seven times. Consistent with prior research, independent samples *t*-tests revealed that there were no differences between dyads who had a topic in common and those who did not have a topic in common on dispositional attributions, t(85) = .26, p = .79, or media attributions, t(85) = -1.58, p = .11.

told that they could do other activities while having the conflict discussion, such as play cards, text friends, go online, etc., as long as they did not contact their partners using another channel (e.g., Facebook, SMS, Instagram).<sup>2</sup> Dyad members were instructed only to use email to communicate with their partners. Last, they were asked if they understood. If participants said yes, then they were told to begin and please to let the researcher know when they were done with their conversation by opening the door. The session was scheduled for one hour, however sessions ranged from 30 minutes to 90 minutes. After participants ended their discussion, they were prompted to complete a post-interaction questionnaire. This questionnaire assessed the attributions that participants made regarding their partners' conflict behaviors, relationship information, and demographic information. Once participants completed the questionnaire, they were debriefed, paid, and thanked for their time.

#### **Experimental Manipulation**

Media synchronicity. Media synchronicity refers to the extent to which a medium enables messages to be exchanged immediately and at the same time (Dennis et al., 2008). All dyad members used their assigned email accounts to communicate with their partners (e.g., dyadmember1@gmail.com, dyadmember2@gmail.com). Couples who were randomly assigned to the synchronous condition were given each other's email addresses and exchanged messages in real time and directly with one another. Conversely, dyads who were randomly assigned to the asynchronous condition were given assigned email accounts (e.g., dyadmember3@gmail.com, dyadmember4@gmail.com), but they were not given the address to their partners' assigned email account. Instead, they were given the researcher's email address (e.g., dyadmember@gmail.com)

<sup>&</sup>lt;sup>2</sup> Although there was not a formal test, informal inspection of the conversations suggested no major deviation from these instructions.

but they were told that this address was their partners' email address. Therefore, when a dyad member (e.g., dyadmember3@gmail.com)\_who was assigned to the asynchronous condition sent a message to his/her partner, the message was really delivered to the researcher (e.g., dyadmember@gmail.com). The researcher then delayed the message for two minutes, copied the email from the senders account into a new message and sent it to the intended receiver/other dyad member (e.g., dyadmember4@gmail.com). This way, participants' original messages remained the same; they were just delayed by two minutes. A two-minute delay was chosen based on previous research that showed a long delay (18-seconds) was more noticeable and elicited negative evaluation in comparison to a short delay (1 second) or a medium delay (10 seconds; Moon, 1999). Therefore, a two-minute delay was expected to be sufficient to elicit a different pattern of interpersonal attributions.

#### **Conflict Interaction Analysis**

To measure the percent of negative and positive conflict behaviors in each conflict discussion, the online conversations were copied and pasted into Excel spreadsheets. The transcripts were then unitized and coded into three different types of conflict behaviors. To do this, each email message was divided into smaller thought units, and then each thought unit was coded as a positive, a negative, or a neutral conflict behavior. The transcripts were unitized by placing forward slashes around each thought unit in the Excel spreadsheet. Unitizers accessed the transcripts from a secure, shared folder in cloud-based storage. The specific affect coding system (SPAFF; Coan & Gottman, 2007) was used to classify thought units as positive, negative, or neutral conflict behaviors. Following the recommendations of Riffe, Lacy, and Fico (2014), the transcripts were unitized and content analyzed by two different groups of coders.
Unitizing transcripts. The researcher and one assistant independently unitized 174 transcripts of conflict discussions into smaller units of observation. These smaller units were then coded for the variables of interest. The unit of observation in this study was the thought unit and the variables of interest were different types of conflict behaviors – positive and negative. A thought unit was defined as a complete idea that the speaker wished to express in a message (Holsti, 1969). Thought units were defined as complete sentences that had a subject and a verb. Examples of thought units from this study include, "I think at this point we've reached an agreement on this topic." and "You would understand time better if you valued it like money."

Although a thought unit was defined as a complete sentence containing a subject and a verb, each message was unitized according to the writers' punctuation first. However, if writers punctuated dependent clauses (sentences that have a subject and a verb but cannot stand alone) or fragments (clauses or phrases that cannot stand alone as a complete sentence) or phrases (sentence that has a subject but not a verb) as complete sentences, but they were really not complete sentences, then the unitizers would combine these dependent clauses, fragments, or phrases with the independent clause, to which they were subordinate, to form complete sentences. As an example, the following were combined to form one thought unit, "Too heavy. I like traveling snacks! Almonds and fruit and water and coffee." This way, coders had enough information to classify thought units as different types of conflict behavior (Riffe et al., 2014). Interjections that stood alone in one message turn (i.e., one email message) were unitized as one thought unit (e.g., "<sup>©</sup>" = 1 unit; "lol!" = 1 unit). But, interjections that did not stand alone in one message turn were unitized with the sentences that they complemented to aid interpretation (e.g., "OMG! I was just writing something like that!" = 1 unit; "lol, thats what i meant!" = 1 unit). Interjections were defined as information that expressed emotion and shaped the tone of the

message to which they were adjacent. Examples of interjections included "yes!" "Good! :-)," "wow!" and "Seriously?"

The unitizers were trained by using transcripts from conflict discussions that were not included in the final analysis. After the researcher and the assistant obtained an inter-coder reliability of .85 (*kappa*) on practice transcripts, they proceeded to unitize 100% of the transcripts. Inter-coder reliability was assessed weekly, over the course of five weeks, to prevent slippage. Inter-coder reliabilities (*kappa*) ranged from .88 to .99. The unitizers identified a total of 5,275 thought units from 174 transcripts (M = 30.31, SD = 18.44 per person). The number of units ranged from 6 to 105 per person. An independent samples *t*-test revealed that the number of units differed between the synchronous CMC (M = 33.81, SD = 20.41 per person) and the asynchronous CMC (M = 26.73, SD = 15.49 per person) conditions, t (172) = 2.57, p = .01. Thus, individuals transmitted more information in synchronous CMC than when they were using asynchronous CMC.

**Conflict behavior coding**. Four different coders, who were blind to the research hypotheses, classified each thought unit as a negative conflict behavior, positive conflict behavior, or neutral conflict behavior/other information. The specific affect coding system (SPAFF; Coan & Gottman, 2007) was used to categorize each thought unit into different behavior types. The SPAFF has been used in a host of studies that involved conflict between romantic couples, newlyweds, married couples, peers, and parent-child interactions (see Coan & Gottman, 2007 for review). The SPAFF has received consistently fair to good reliabilities that range from  $\alpha = .67$  to .96 for each SPAFF code (Hawkins, Carrere, & Gottman, 2002).

The SPAFF is comprised of 18 different codes for positive, negative, and neutral affect. Although couples' conflict behaviors were not coded for 18 different types of affect, as couples' global positive and negative behaviors were desired, coders trained by learning to identify each of these codes. Recognizing multiple indicators of affect helped coders identify positive and negative affect. It also helped coders defend their coding decisions when disagreements were discussed during meetings.

The SPAFF has five codes for positive affect. These include affection (expresses genuine care for one's partner, "I love you"), enthusiasm (conveys a passionate interest in someone, "I can't wait to go on vacation with you!"), humor (communicates shared amusement, "Sidenote: I'm getting him a tiger halloween costume"), interest (desire to know partner's opinions, "What do you mean by that?"), and validation (expresses acceptance, "I agree with you").

The SPAFF also includes 12 codes for negative affect and one code for neutral affect. The negative affect codes that were observed most frequently in this study include anger (a violation of respect, "oh my goshhhhhhhhhhhhhhhhhhhh you are about to make me mad."), belligerence (getting a rise out of partner, "What would you do if I did?"), contempt (belittles partner, "You're an idiot"), criticism (attacks partners' character, "You always got to be a smart ass"), and defensiveness (deflects responsibility, "They're not tantrums"). SPAFF codes that were less frequently used or not used at all include physical disgust, fear/tension, stonewalling, domineering, sadness, threats, and whining. An other or a neutral code was defined as having no affect ("Hello") in comparison to overt affect ("Hey babe!!!!!!!"). The neutral affect code was used if the message appeared to have no affect, if the purpose of the message was to exchange information, and if the message was unrelated to the dyad ("I'm gonna get him [a pet] a million toys and hug him bunches <3").

Similar to unitizing, coders trained using transcripts from online discussions that were not used in the final analysis. All of the coders analyzed 100% of the corpus (N = 174 transcripts).

Data from two assistants (out of four assistants) were dropped from the study, as they had consistently low inter-coder agreement. As a result, pairwise reliabilities (kappa) initially ranged from .36 to .87 among all four coders. However, after removing the data from two assistants, who had consistently low inter-coder reliability, pairwise reliabilities ranged from .77 to .87 (kappa). Similar to unitizing, inter-coder reliability was assessed weekly, for a total of four weeks, to prevent coder drift. The coders identified a total of 1,029 negative statements (M =5.91, SD = 7.46 per person), 1,361 positive statements (M = 7.82, SD = 5.76 per person), and 2,885 neutral statements (M = 16.58, SD = 12.80 per person). There were no differences between the frequency, p = .39, or percent of positive behaviors in the synchronous CMC (M = 0.26, SD =0.18 per person) and the asynchronous CMC (M = 0.31, SD = 0.16 per person) conditions, t(172)= -1.67, p = .09. Nor were there differences between the frequency, p = .15, or percent of negative behaviors in the synchronous CMC (M = 0.18, SD = 0.18 per person) and the asynchronous CMC (M = 0.19, SD = 0.17 per person) conditions, t(172) = 3.19, p = .75. Percentages of individuals' negative and positive conflict behaviors were used in the final analysis (e.g., positive conflict behaviors/total conflict behaviors).

#### Measurement

**Relational satisfaction.** Relational satisfaction refers to the "positive versus negative affect experienced in a relationship" (Rusbult, Martz, & Agnew, 1998, p. 359). Rusbult et al.'s 10-item global and facet-level relational satisfaction scale was used to measure participants' preinteraction relational satisfaction before the conflict discussion (see the Appendix for all measures). Following the recommendation of Rusbult et al., only the global satisfaction items were used in the final analysis, as the facet items were only included to enhance reliability. The four global items retained include, "I feel satisfied with our relationship," "My relationship is close to ideal," "Our relationship makes me happy," and "Our relationship does a good job fulfilling my needs for intimacy, companionship, etc." (1 = Strongly disagree, 5 = Strongly agree). Higher scores reflect greater relational satisfaction.

Attributions. Three different scales were used to measure individuals' judgments regarding their partners' conflict behaviors: dispositional, situational, and media attribution scales. Each of these scales has been used in previous research (e.g., Jiang, Bazarova, & Hancock, 2011; Walther, Kashian, Jang, & Shin, in press) with fair to good reliabilities ( $\alpha = .66$  to .87). Responses ranged from 1 (*Strongly disagree*) to 5 (*Strongly agree*) where higher scores represented a greater degree of dispositional attributions.

*Dispositional attributions*. Dispositional attributions were measured using four items. Items included, "My partner's behavior reflects who s/he is," "My partners' behavior was consistent with his/her personality," "The way my partner behaved was determined by his/her personal nature," and "My partners' conduct was typical for people with his/her personality".

*Situational attributions*. Situational attributions were assessed using a 5-item scale. Items included "My partner's behavior was mostly shaped by the environment," "My partner may behave differently in front of other people," "My partner acted as s/he did because of the situation," "The way my partner behaved was typical in the setting," and "S/he was just having a bad day". This scale was not used in the final analysis due to poor structural validity.

*Media attributions*. Attributions due to technology were assessed using four items (Jiang et al., 2011). The items included, "Technology makes people behave this way," "My partner's behavior was mostly shaped by the media environment," "My partner's conduct is because s/he was doing that online," and "My partner behaved the way s/he did because we had this conversation online".

**Exploratory factor analysis.** Because media attribution is a new measure that represents a special type of situational attribution, it is important to know whether or not media attributions represent a separate aspect of situational attributions or comprise the same dimension as situational attributions. To assess measurement validity of the constructs, media and situational attributions were first submitted to an exploratory factor analysis (EFA) using SPSS statistical software to check for viable multidimensional solutions. Maximum likelihood (ML) factor extraction method, a visual examination of the scree plot, and eigenvalues > 1 were used to determine the number of factors to retain. The ML extraction method provides a goodness-of-fit significance test for the factors that are extracted from the items submitted to EFA. This test makes it possible to compare models with different numbers of factors then make a decision regarding how many factors to retain based on fit indices. After comparing all of the possible solutions, a three-factor solution appeared to fit the data,  $\chi^2(18) = 14.15$ , p = .71, in comparison to a two-factor solution,  $\chi^2(26) = 50.19$ , p = .003, and a one-factor solution,  $\chi^2(35) = 94.58, p < .001$ . Therefore, the two factor solution and the one-factor solution for media attributions and situational attributions did not work.

Because the three-factor solution appeared to fit the data, oblique rotation was then used to interpret the three-factor solution for exploratory purposes. Pre-established criteria, such as salience of factor loadings (>.30), no high cross loadings, and no factors fewer than three were used to select items for each factor (McCroskey & Young, 1979; Thurstone, 1947). Inspection of the structure matrix (i.e., correlations between the variables and the factors) revealed that only one of the factors met these criteria – media attributions. Therefore, only the media attribution factor was retained for final analysis ( $\alpha = .79$ ). The oblique rotated structure matrix with the factor loadings, means, and standard deviations for all of the items is in the Appendix, Table A1. **Confirmatory factor analysis**. After completing the EFA, pre-interaction relational satisfaction, dispositional attributions, and media attributions were submitted to a confirmatory factor analysis (CFA), as all of these measures have been used in previous studies. Lavaan 0.5-18 for R, statistical analysis software, was used to perform the analysis (Rosseel, 2012). After ML was used to estimate the factor loadings, the internal consistency theorem ( $r_{ij} = r_{iT}r_{jT}$ , where i and j are alternative indicators of the same latent variable T) was used to generate predicted inter-item correlations for each construct. Each predicted correlation (P) was then compared with its observed correlation (O), as low residuals (i.e., the difference between O-P) that do not exceed the amount of error expected by chance ( $\alpha = .05$ ) are good indicators of internal consistency (Hunter & Gerbing, 1982). Internal consistency determines whether all of the items in a measure represent one dimension.

The researcher examined the internal consistency of the items that represented preinteraction relational satisfaction first. The residual errors for five indicators of pre-interaction satisfaction ranged from -0.005 to 0.13. A local test of the largest residual showed that it was within sampling error and did not exceed the deviation expected by chance, z = 1.85, p = .05. However, the measurement model had poor fit,  $\chi^2(5) = 26.64$ , p = <.0001, RMSEA = .15. To resolve the problem, one global satisfaction item with large error was removed (original scale item #2; "My relationship is much better than others' relationships") so that the residuals ranged from 0.005 to 0.01, and good fit was obtained,  $\chi^2(2) = 2.06$ , p = .35, RMSEA = .01. Therefore, the remaining four items that were used to measure pre-interaction relational satisfaction were internally consistent or one dimensional ( $\alpha = .90$ ).

Next, the residuals for dispositional attributions were examined. The residuals ranged from 0.002 to 0.12. A local test of the greatest residual revealed that it did not exceed the

deviation expected by chance, z = 1.37, but the data were not consistent with the measurement model,  $\chi^2(5) = 27.56$ , p < .001, RMSEA = .16. After removing two items that had the greatest error (original scale items #5 and #6; "My partner acted that way because of whom s/he is" and "He/she was in the same mood before we started as when we finished") the residuals ranged from 0.001 to 0.06, and good fit indices were obtained,  $\chi^2(2) = 3.55$ , p = .16, RMSEA = .03. Dispositional attributions exhibited good reliability as well ( $\alpha = .72$ ).

Last, the internal consistency of media attributions was assessed. The residuals ranged from < 0.009 to 0.11. A local test showed that the largest residual did not exceed the difference expected by chance, z = 1.11, but the model had poor fit initially,  $\chi^2(5) = 11.58$ , p = .04, RMSEA = .05. To improve fit, one item with large error was removed (original scale item #3; "The way my partner behaved was typical in an online environment"). After the model was respecified, the data provided good fit with the measurement model,  $\chi^2(2) = 4.87$ , p = .08, RMSEA = .02, and reliability ( $\alpha$  = .79). The final factor structure, with the factor loading, mean, and standard deviation for each item is in the Appendix, Table A2.

**Manipulation check.** To verify the media synchronicity manipulation, participants were asked four questions that referred to the rate at which they received their partners' messages. Items included "The messages I received from my partner arrived immediately," "The messages I received from my partner came fast," "The messages I received from my partner came quickly," and "There was no delay in the messages that I received from my partner." Item responses ranged from 1 (*Strongly disagree*) to 5 (*Strongly agree*) ( $\alpha = .93$ ).

An independent samples *t*-test examined the perceived rate of message delivery in the synchronous CMC and the asynchronous CMC conditions. The results showed the induction was successful, t (172) = 5.45, p < .001,  $\eta^2 = .14$ . Participants in the synchronous CMC condition

reported that their partners' messages arrived at a faster rate (M = 3.09, SD = 0.95) than did participants in the asynchronous CMC condition (M = 2.28, SD = 0.97).

#### **CHAPTER 4: RESULTS**

Several operations were done to prepare the data for analysis. The original sample included 94 dyads (N = 188). After data from seven dyads were omitted from the analysis, the final sample comprised 87 dyads (N = 174).<sup>3</sup> To start, hot deck imputation for SPSS (Myers, 2011) was used to handle missing data, which is the process of replacing missing values with values from donor cases whose values represent similar cases in the dataset. A value is imputed when a donor case matches a recipient case on a predetermined set of predictor variables. Three different values of global relational satisfaction from the pre-interaction questionnaire were imputed into three different cases for a final N of 174 (87 dyads). Existing relational satisfaction scores from all of the global satisfaction items were used to predict missing data.

A series of transformations were conducted to normalize some of the data distributions. Square root transformations were performed on all conflict behaviors and media attributions to reduce positive skew, and power transformations were performed on pre-interaction relational satisfaction and dispositional attributions to reduce negative skew. After data were transformed, all of the continuous predictor variables were grand-mean centered (positive conflict behaviors, negative conflict behaviors, and pre-interaction relational satisfaction) to aid interpretation

<sup>&</sup>lt;sup>3</sup> One dyad was eliminated because the couple did not follow instructions. Instead of having an interactive, back-and-forth discussion, dyad members wrote about their conflict in an email message, but did not send it (e.g., "In my impression the conflict inducing reason is that my girl friend control my money because I really like air jordan shoes...I think we quarrel 4-5 times because this problem"). Two other couples were not included in the analysis because they did not complete the posttest. And the remaining four dyads were omitted because they were given different instructions from the rest of the sample. These couples were told that they had a set amount of time to resolve the conflict (30 minutes in synchronous CMC, and 45 minutes in asynchronous CMC). Because time constraints can impact individuals' behaviors (Walther, Anderson, & Park, 1994), time limits were not overtly mentioned for the rest of the sample. Rather, couples were instructed to let the researcher know when they were done.

(Cohen, Cohen, West, & Aiken, 2003). The transformed and grand-mean centered data were then used to test all subsequent hypotheses.

A common assumption of statistical analysis is the independence of observations. Because this study is comprised of romantic couple dyads who engaged in a conflict discussion, it is possible that dyad members' behaviors may have influenced each other and their scores on their outcome variables. In these cases, data from members of the same dyad may be more similar than data from members of different dyads. That is, there may be less within-dyad variance than between-dyad variance among observations, otherwise known as nonindependence of observations. If data that are not independent are analyzed as if they are independent, then this could decrease the validity of the results due to biased variance estimates, standard error estimates, and a possible increase in type 1 or type 2 error (Kenny et al., 2006, p. 45).

To determine if there was nonindependence among dyad members, intraclass correlations (ICC) were conducted using multilevel modeling (MLM) with ML estimation (Kenny et al., 2006, p. 93). This estimate is also known as the double entry method or the pairwise correlation method (p. 37). The ICC estimates the proportion of the outcome variable that is accounted for by the dyad, or the percent of shared variance among dyad members. A significant result suggests within-dyad scores are correlated and indicates nonindependence of observations. The ICC for the outcome variable dispositional attributions is r = .04, p = .67, and the ICC for the outcome variable media attributions is r = .16, p = .11. Because Kenny et al. suggest using a liberal alpha level (.10 to .25) for considering the significance of the ICC to avoid falsely ignoring nonindependence and risking the validity of the results, the data were analyzed protecting against nonindependence.

To control for nonindependence of observations within dyads, the statistical technique MLM was used to analyze the data. Multilevel modeling is used when there is a hierarchy of units in the data. Multilevel modeling allows researchers to analyze across levels by controlling for the shared variance between members of the same dyad. Table 1 provides descriptive statistics for all of the variables used in the analysis both pre- and post-transformation so the reduction in skew is evident. Table 2 provides zero-order correlation matrices for all of the variables used in this study both pre- and post-transformation so the change in each correlation coefficient's magnitude is apparent.

# Table 1

# Descriptive Statistics for Variables in the Study

	Pre Transformation				Post Transformation							
	Min	Max	Mean	SD	Skew	SE	Min	Max	Mean	SD	Skew	SE
Pre-interaction Satisfaction	1.00	5.00	4.03	0.84	-1.09	0.18	1.00	125.00	73.56	35.62	-0.10	0.18
Percent Negative Messages	0.00	0.90	0.72	0.18	1.06	0.18	0.00	0.95	0.36	0.24	-0.07	0.18
Percent Positive Messages	0.00	0.83	0.29	0.18	0.73	0.18	0.00	0.91	0.51	0.17	-0.16	0.18
Dispositional Attributions	2.25	5.00	4.17	0.56	-0.47	0.18	5.06	25.00	17.69	4.55	-0.07	0.18
Media Attributions	1.00	4.25	2.33	0.80	0.37	0.18	1.00	2.06	1.50	0.26	0.00	0.18

*Note.* N = 174.

# Table 2

# Correlations among Variables used in the Study

	Pre Transformation				Post Transformation					
	1	2	3	4	5	1	2	3	4	5
1. Pre-interaction Satisfaction	1					1				
2. Partners' Negative Messages	26**	1				24**	1			
3. Partners' Positive Messages	.26**	54**	1			.28**	58**	1		
4. Dispositional Attributions	.28**	09	.16*	1		.34**	09	.15*	1	
5. Media Attributions	10	.01	.03	22**	1	13	.00	.02	24**	1

*Note*. *N* = 174.

\**p* < .05, \*\**p* < .01

#### **Hypotheses Tests**

The first hypothesis investigated whether individuals' pre-discussion relational satisfaction moderated the attributions that individuals made for their partners' positive conflict behavior. Specifically, H1a predicted that individuals who have greater pre-discussion relational satisfaction make more dispositional attributions for their partners' increasing positive conflict behaviors and less dispositional attributions for their partners' decreasing positive conflict behaviors; whereas, individuals who have less pre-discussion relational satisfaction make less dispositional attributions for their partners' increasing positive conflict behaviors and more dispositional attributions for their partners' decreasing positive conflict behaviors. A multilevel model for dispositional attributions tested H1a with the following predictor variables: partners' positive conflict behaviors, pre-interaction relational satisfaction, and their product - partners' positive conflict behaviors x pre-interaction relational satisfaction. Multilevel modeling is similar to multiple regression analysis in the sense that the outcome variable is modeled as a linear combination of predictor variables.<sup>4</sup> As shown in Table 3, the predicted interaction between partners' positive conflict behaviors and individuals' pre-discussion satisfaction on dispositional attributions was significant, b = 0.10, p = .03,  $R^2 = .11$ . The interaction explained 3% of unique variance in dispositional attributions,  $R^2_{change} = .03$ , independent of partners' positive conflict

<sup>&</sup>lt;sup>4</sup> In MLM, each predictor variable is weighted by a coefficient that quantifies how much variation in that predictor variable is related to variation in the outcome, similar to multiple regression analysis (Hayes, 2006, p. 389). The primary difference between MLM and multiple regression is that MLM can estimate fixed effects and random effects. A fixed effect has a single value in the model that is applied to all level-one variables (e.g., individuals) regardless of group membership (e.g., dyad). In contrast, a random effect has both a fixed effect and a random effect because it is allowed to vary between level-one variables (e.g., individuals) and level-two variables (e.g., dyads). In an ordinary regression, the intercept and the predictors are fixed effects, and the residual is a random effect. But in MLM the intercept and the coefficients can be random and fixed effects. In most MLM studies, the intercept is estimated as a random effect, as this allows the mean of the level-one units nested in dyads to vary between dyads.

behaviors and individuals' pre-interaction relational satisfaction. Individuals with greater preinteraction relational satisfaction made more dispositional attributions as their partners' positive conflict behaviors increased and less dispositional attributions as their partners' positive behaviors decreased. There was also a significant relationship between pre-interaction relational satisfaction and dispositional attributions, b = 0.04, p = .0001,  $R^2 = .08$ . Individuals with greater pre-interaction relational satisfaction made more dispositional attributions. Together, the data were consistent with H1a.

#### Table 3

Fixed Effects	β	b	SE	df	t
Intercept	-	17.49	0.33	93	52.61***
Pre-interaction Satisfaction	0.33	0.04	0.00	155	4.56***
Partner Positive Conflict Messages	0.05	1.45	1.90	154	0.76
Pre-inter. Sat. x Partner Pos. Messages	0.14	0.10	0.05	173	2.12*
Random Effects		Est.	SE	UL	LL
Residual		17.34***	2.633	12.87	23.35
Dyad Intercept		0.26	1.89	0.00	300344.90

Estimates for a Multilevel Model of Dispositional Attributions (H1a)

*Note.* LL = lower limit confidence interval; UL = upper limit;  $R^2 = .11$ . ICC r = .04,  $p = .67^5$ 

\**p* < .05, \*\**p* < .01, \*\*\**p* < .001

Although the significance of the interaction is important, as it indicates the positive

relationship between partners' positive conflict messages and dispositional attributions depends

<sup>&</sup>lt;sup>5</sup> Kashy, Donnellan, Ackerman, and Russell (2009) recommend reporting the partial ICC when using MLM. The partial ICC represents the amount of shared variance among dyad members on the dependent variables controlling for the predictor variables in the model.

on individuals' pre-interaction relational satisfaction, the moderation test does not indicate the degree of pre-interaction relational satisfaction individuals must have for this conditional effect to take place. That is, it is unknown the degree of satisfaction individuals must have to make relationally enhancing or diminishing attributions for their partners' positive conflict behaviors. A simple slopes analysis can answer these questions and give a more substantive interpretation of the moderation analysis (Cohen et al., 2003; Hayes, 2013).

A simple slopes analysis of H1a probed the interaction. Specifically, it compared individuals one standard deviation above and below the mean on pre-interaction relational satisfaction to see what values of pre-interaction relational satisfaction would influence the conditional effect of positive conflict behaviors (X) on dispositional attributions (Y). For the analysis, two different values of pre-interaction relational satisfaction were selected (35.62 = 1)SD above the mean; and -35.62 = 1 SD below the mean). The simple slope for individuals who had above average pre-interaction relational satisfaction was significant, b = 0.10, SE = 0.05, t(173) = 2.17, p = .03. And the simple slope for individuals who had below average preinteraction relational satisfaction was significant, b = 0.10, SE = 0.05, t(173) = 2.12, p = .03.<sup>6</sup> Therefore, individuals with greater pre-interaction relational satisfaction make more dispositional attributions as their partners' positive conflict behaviors increase and less dispositional attributions as their partners' positive conflict behaviors decrease. Moreover, individuals with less pre-interaction relational satisfaction make less dispositional attributions as their partners' positive conflict behaviors increase and more dispositional attributions as their partners' positive conflict behaviors decrease.

<sup>&</sup>lt;sup>6</sup> Dispositional attributions were modeled as a function of individuals' pre-interaction relational satisfaction, partners' positive conflict behaviors, and the interaction between individuals' pre-interaction relational satisfaction and partners' positive conflict behaviors.

The next hypothesis, H1b, examined the moderated relationship between partners' positive conflict behaviors and media attributions. H1b predicted that individuals who have greater pre-discussion relational satisfaction make less media attributions for their partners' increasing positive conflict behaviors, whereas individuals who have less pre-discussion relational satisfaction make more media attributions for their partners' increasing positive conflict behaviors. A multilevel model for media attributions tested this hypothesis with the following predictor variables: partners' positive conflict behaviors, pre-interaction relational satisfaction. As shown in Table 4, the hypothesized interaction was not significant, b = -0.00, p = .12, nor were any other effects. Therefore, the data were not consistent with H1b.

Table 4

Fixed Effects	β	b	SE	df	t
Intercept	-	1.51	0.02	87	71.20***
Pre-interaction Satisfaction	-0.14	-0.00	0.00	159	-1.88
Partner Positive Conflict Messages	0.07	0.11	0.11	159	0.96
Pre-inter. Sat. x Partner Pos. Messages	-0.11	-0.00	0.00	172	-1.54
Random Effects		Est.	SE	UL	LL
Residual		0.06***	0.00	0.04	0.08
Dyad Intercept		0.00	0.00	0.00	0.06

Estimates for a Multilevel Model of Media Attributions (H1b)

*Note.* LL = lower limit confidence interval; UL = upper limit; ICC r = .09, p = .39

\*\*\**p* < .001

The second hypothesis focused on the attributions individuals make for their partners' negative conflict behaviors. H2a predicted that individuals who have greater pre-discussion relational satisfaction make less dispositional attributions for their partners' increasing negative conflict behaviors, whereas individuals who have less pre-discussion relational satisfaction make more dispositional attributions for their partners' increasing negative conflict behaviors. A multilevel model for dispositional attributions tested H2a. As shown in Table 5, the hypothesized interaction was not significant, b = -0.04, p = .20. There was, however, a significant relationship between pre-interaction relational satisfaction and dispositional attributions, b = 0.04, p = .0001,  $R^2 = .08$ . Individuals who have greater relational satisfaction make more dispositional attributions. Thus, the data were not consistent with H2a.

Table 5

Fixed Effects	β	b	SE	df	t
Intercept	-	17.58	0.32	90	53.20***
Pre-interaction Satisfaction	0.34	0.04	0.00	153	4.71***
Partner Negative Conflict Messages	-0.02	-0.38	1.39	153	-0.27
Pre-inter. Sat. x Partner Neg. Messages	-0.08	-0.04	0.03	170	-1.26
Random Effects		Est.	SE	UL	LL
Residual		17.96***	1.92	14.56	22.16
Dyad Intercept		0.00	0.00		

Estimates for a Multilevel Model of Dispositional Attributions (H2a)

*Note.* LL = lower limit confidence interval; UL = upper limit; ICC r = -.006, p = .95

\*\*\**p* < .001

The next hypothesis predicted that individuals who have greater pre-discussion relational satisfaction make more media attributions as their partners' negative conflict behaviors increase, whereas individuals who have less pre-discussion relational satisfaction make less media attributions as their partners' negative conflict behaviors increase (H2b). For the analysis, individuals' pre-interaction relational satisfaction, partners' negative conflict behaviors, and their product (partners' negative conflict behaviors x individuals' pre-interaction relational satisfaction) were included as predictors in a multilevel model predicting media attributions. As Table 6 shows, the interaction was not significant, b = 0.00, p = .81, nor were any other effects. Thus, the data were not consistent with H2b.

Table 6

Fixed Effects	β	b	SE	df	t
Intercept	-	1.50	0.02	88	69.29***
Pre-interaction Satisfaction	-0.13	0.00	0.00	163	-1.67
Partner Negative Conflict Messages	-0.04	-0.04	0.08	162	-0.51
Pre-inter. Sat. x Partner Negative Messages	0.01	0.00	0.00	173	0.23
Random Effects		Est.	SE	UL	LL
Residual		0.05***	0.00	0.04	0.07
Dyad Intercept		0.00	0.00	0.00	0.04

Estimates for a Multilevel Model of Media Attributions (H2b)

*Note.* LL = lower limit confidence interval; UL = upper limit; ICC r = .14, p = .18

\*\*\**p* < .001

The third hypothesis investigated if media synchronicity (synchronous CMC vs. asynchronous CMC) moderated the effect of the interaction between negative conflict behaviors

and pre-interaction relational satisfaction on media attributions in a three-way interaction (H3a). H3a hypothesized that individuals who use asynchronous CMC and have less pre-interaction relational satisfaction make more media attributions for their partners' increase in negative conflict behaviors than do individuals who use synchronous CMC and have less pre-interaction relational satisfaction. To perform the analysis, asynchronous CMC was coded as -0.5 and synchronous CMC was coded as 0.5. Seven predictor variables for media attributions were then included in a multilevel model. These included partners' negative conflict behaviors, preinteraction relational satisfaction, media synchronicity, partners' negative conflict behaviors x pre-interaction satisfaction, partners' negative conflict behaviors x media synchronicity, preinteraction satisfaction x media synchronicity, and partners' negative conflict behaviors x preinteraction satisfaction x media synchronicity. As shown in Table 7, media synchronicity did not moderate the effect of the interaction between negative conflict behaviors and pre-interaction relational satisfaction on media attributions, p = .67. No other effects were significant. To further investigate H3a, a reduced multilevel model for media attributions was run to see if eliminating two non significant two-way interaction terms (partners' negative messages x media synchronicity and pre-interaction relational satisfaction x media synchronicity) would increase the precision of the predictor variables. As shown in Table 8, the three-way interaction was not significant, nor were any other effects, p = .61. Thus, the data were not consistent with H3a.

## Table 7

Fixed Effects	β	b	SE	df	t
Intercept	-	1.50	0.02	86	70.36***
Pre-interaction Satisfaction	-0.13	-0.00	0.00	162	-1.79
Partner Negative Conflict Messages	-0.04	-0.04	0.08	161	-0.54
Media Synchronicity	0.07	0.03	0.04	86	0.89
Pre-inter. Sat. x Partner Neg. Messages	0.03	0.00	0.00	173	0.42
Pre-inter. Sat. x Media Synchronicity	0.08	0.00	0.00	162	1.07
Partner Neg. Messages x Media Synchronicity	0.10	0.23	0.17	161	1.36
Pre-inter. Sat. x Partner Neg. Mess. x Media Synch.	-0.03	-0.00	0.00	173	-0.41
Random Effects		Est.	SE	UL	LL
Residual		0.05***	0.00	0.04	0.07
Dyad Intercept		0.00	0.00	0.00	0.04

# Estimates for a Multilevel Model of Media Attributions in a Three-way Interaction (H3a)

*Note.* LL = lower limit confidence interval; UL = upper limit; ICC r = .13, p = .24

\*\*\**p* < .001

### Table 8

Fixed Effects	β	b	SE	df	t
Intercept	-	1.50	0.21	87	69.35***
Pre-interaction Satisfaction	-0.13	0.00	0.00	163	1.67
Partner Negative Conflict Messages	-0.04	-0.04	0.08	162	-0.55
Media Synchronicity	0.07	0.03	0.04	87	0.87
Pre-inter. Sat. x Partner Neg. Messages	0.01	0.00	0.00	174	0.25
Pre-inter. Sat. x Partner Neg. Mess. x Media Synch.	-0.03	0.00	0.00	173	-0.50
Random Effects		Est.	SE	UL	LL
Residual		0.05***	0.00	0.04	0.07
Dyad Intercept		0.00	0.00	0.00	0.04

*Note*. LL = lower limit confidence interval; UL = upper limit; ICC r = .14, p = .18

\*\*\**p* < .001

The last hypothesis examined if media synchronicity moderated the interaction between negative conflict behaviors and pre-interaction relational satisfaction on dispositional attributions (H3b). The test for a three-way interaction investigated if individuals who use asynchronous CMC and have less pre-discussion relational satisfaction make less dispositional attributions for their partners' increase in negative conflict behaviors than do individuals who use synchronous CMC. The multilevel model included the same predictor variables as the above model for H3a, but with dispositional attributions (rather than media attributions) as the outcome variable. As shown in Table 9, the test for a three-way interaction was not significant, b = 0.02 p = .77. There

was, however, a significant relationship between pre-interaction relational satisfaction and dispositional attributions, b = 0.04, p < .001,  $R^2 = .08$ , similar to H2a.

Table 9

Estimates for a Multilevel Model of Dispositional Attributions in a Three-way Interaction (H3b)

Fixed Effects	β	b	SE	df	t
Intercept	-	17.55	0.32	90	53.44***
Pre-interaction Satisfaction	0.35	0.04	0.00	155	4.91***
Partner Negative Conflict Messages	-0.01	-0.30	1.38	154	-0.22
Media Synchronicity	0.01	0.16	0.65	90	0.79
Pre-inter. Sat. x Part. Neg. Messages	-0.10	-0.05	0.03	170	-1.49
Pre-inter. Sat. x Media Synchronicity	-0.12	-0.03	0.01	155	-1.77
Partner Negative Messages x Media Synch.	-0.12	-4.63	2.77	154	-1.66
Pre-inter. Sat. x Neg. Mess. x Media Synch.	0.02	0.02	0.07	170	0.28
Random Effects		Est.	SE	UL	LL
Residual		17.30***	2.54	12.82	23.35
Dyad Intercept		0.16	1.90	0.00	86418972

*Note.* LL = lower limit confidence interval; UL = upper limit; ICC r =.00, p = .93

\*\*\**p* < .001

As a follow up analysis to H3b, a reduced model for dispositional attributions was run to see if eliminating two non significant two-way interaction terms (partners' negative messages x media synchronicity and pre-interaction satisfaction x media synchronicity) would increase the precision of the predictor variables. As shown in Table 10, the test for the three-way interaction was not significant, p = .72. There was, again, a significant relationship between pre-interaction

relational satisfaction and dispositional attributions, b = 0.04, p = .0001,  $R^2 = .08$ , similar to H2a. Individuals who had greater relational satisfaction made more dispositional attributions for their partners' behaviors. Overall, the data were not consistent with H3b. Media synchronicity did not moderate the interaction between partners' negative conflict behaviors and individuals' preinteraction relational satisfaction on dispositional attributions.

#### Table 10

Fixed Effects	β	b	SE	df	t
Intercept	-	17.58	0.33	90	53.11***
Pre-interaction Satisfaction	0.34	0.04	0.00	154	4.73***
Partner Negative Conflict Messages	-0.01	-0.33	1.40	153	-0.24
Media Synchronicity	0.01	0.17	0.66	90	0.26
Pre-inter. Sat. x Neg. Messages	-0.09	-0.04	0.03	170	-1.29
Pre-inter. Sat. x Neg. Mess. x Media Synch.	0.02	0.02	0.07	170	0.35
Random Effects		Est.	SE	UL	LL
Residual		17.94***	1.92	14.54	22.14
Dyad Intercept		0.00	0.00		

Estimates for a Reduced Multilevel Model of Dispositional Attributions (H3b)

*Note.* LL = lower limit confidence interval; UL = upper limit; ICC r =.00, p = .97

\*\*\**p* < .001

# **Hypotheses tests using dyad as the unit of analysis**. Another option to maintain independence of observations is to use the dyad as the unit of analysis. This is done by averaging each of the dyads' scores to create a mean score for each dyad. Using dyads' mean scores in the analysis eliminates nonindependence by only using unique observations (Kenny et al., 2006, p.

26). Two possible limitations to using the dyad as the unit of analysis include a loss in power and ecological fallacy. A loss in power occurs due to the decrease in sample size from using the individual as the unit of analysis (N = 174) to using the dyad as the unit of analysis (N = 87). And an ecological fallacy may occur if one were to interpret the results to make inferences regarding individuals, rather than the unit at which the data were analyzed – the dyad. Because MLM and using dyad means can be used to analyze dyadic data, the data were analyzed using dyad means to see if there were any differences.

The dyad-level analysis revealed a different pattern of results. In contrast to the results obtained using MLM, two different hypotheses (H1b and H2a) were consistent with the data using the dyad-level data, while only H1a was consistent with the data using MLM. H1a and H1b examined the influence of pre-interaction relational satisfaction and positive behaviors on attributions, while H2a investigated the impact of pre-interaction relational satisfaction and negative behaviors on dispositional attributions. A review of the dyadic data analysis literature suggests potential explanations, all of which seem to center on power (e.g., Kenny et al., 2006).

One reason for the different pattern of results may be that using the dyad as the unit of analysis reduces the variance of each term in the model. These lower variances tend to increase the size of the zero-order correlations between variables and their corresponding effect sizes (Kenny et al., 2006, p. 60). This is evident in Tables 11 and 12. Table 11 compares the descriptive statistics for the individual-level units and dyad-level units to show the difference in each variable's variance. Table 12 shows the zero-order correlations for the individual-level and dyad-level units to demonstrate the increase in magnitude as a result of the dyad-level units' lower variances. Therefore, it is possible that there was a greater chance of rejecting the null hypotheses when dyad means were used in the analysis rather than when MLM was used. This

may be because dyad members did not have a high degree of nonindependence. According to Kenny et al. (2006), when ICCs are small, as they were in this study (r = .04, ns; r = - .16, ns), there is a relatively small loss in power when dyad means are used in the analysis even though the sample size is reduced by half of its original size (from N = 174 to N = 87) in comparison to using individual-level data (Kenny et al., 2006, p. 59). In these cases, the reduction in sample size is made up for by the increase in effect size that occurs when dyad means are studied. As the ICC increases, the loss in power is noticeable because the data become redundant. Therefore, it is possible that the difference in the results using two different analyses may be due to there being greater power using the dyad as the unit of analysis.

#### Table 11

Comparison of	f Descripti	ve Statistics fo	or Individual-Level	Units and D	vad-Level Units
		./			

	Individual-level <sup>a</sup>				Dyad-level <sup>b</sup>				
	Min	Max	Mean	SD	Min	Max	Mean	SD	
Pre-interaction Satisfaction	1.00	125	73.56	35.62	4.50	125	73.56	30.81	
Percent Negative Messages	0.00	0.95	0.36	0.24	0.00	0.84	0.36	0.20	
Percent Positive Messages	0.00	0.91	0.51	0.17	0.16	0.81	0.51	0.15	
Dispositional Attributions	5.06	25.00	17.69	4.55	9.56	25.00	17.69	3.30	
Media Attributions	1.00	2.06	1.50	0.26	1.06	1.97	1.50	0.20	
an 174 by 07									

 $^{a} N = 174. ^{b} N = 87$ 

# Table 12

	Individual-level <sup>a</sup>				Dyad-level <sup>b</sup>					
	1	2	3	4	5	1	2	3	4	5
1. Pre-interaction Satisfaction	1					1				
2. Negative Messages	37**	1				41**	1			
3. Positive Messages	.35**	58**	1			.42**	60**	1		
4. Dispositional Attributions	.34**	07	.10	1		.39**	14	.20	1	
5. Media Attributions	13	.15*	10	24**	1	21*	.12	06	40**	1
a N = 174. $b N = 87$										

# Comparison of Correlations for Individual-Level Units and Dyad-Level Units

\**p* < .05, \*\**p* < .01

To investigate this idea, a post hoc power analysis using G\*Power (Faul et al., 2009) was conducted to compare the differences in power levels present in each type of statistical analysis. The first power analysis was conducted using the setting for a multiple regression test with fixed effects, as this study examined fixed effects across individuals and couples. Two analyses were conducted: one for the dyad-level data and one for the individual-level data. An analysis for dyad-level data was computed first using the obtained effect size for H1b, as this hypothesis was confirmed using dyad-level data, but not confirmed using MLM. A power level (1 -  $\beta$ ) of .80,  $\alpha$  = .05, and the obtained effect size, Cohen's *f* = .21, was specified. G\*Power reported a post hoc power level of .95,  $\alpha$  = .05, therefore the hypothesis test had ample power. Moreover, G\*Power reported a sample size of 56 would be required for H1b to be consistent with the data when a power level .80,  $\alpha$  = .05 was present, which is consistent with the a priori power analysis, and the obtained sample size (*N* = 87 dyads).

Next, another power analysis was conducted for the same hypothesis (H1b) using the effect size obtained using MLM. A power level  $(1 - \beta)$  of .80,  $\alpha = .05$ , and the obtained effect size, Cohen's *f* = .03, was specified. G\*Power reported a sample size of 291 would be necessary to reject the null hypothesis and obtain a power level of .80,  $\alpha = .05$ . This is in contrast to the obtained sample size (*N* = 174), which produced a power level of .55,  $\alpha = .05$ . A larger sample size may be necessary when conducting MLM. This may be because more parameters are estimated in MLM than in multiple regression, which lowers statistical power (Garcia, Kenny, & Ledermann, 2015). For instance, In H1 and H2, MLM estimated six parameters (four fixed effects and two random effect). The extra parameter in MLM estimates the shared variance between dyad members' scores.

To examine this idea, another post hoc power analysis was conducted for MLM actor (individual) and partner effects (Ackerman, Donnellan, & Kashy, 2011). When a subset of actor and partner effects are used in moderation analysis, as in this study, this is referred to as the actor-partner interdependence moderation model (APIMoM; Garcia et al., 2015). Therefore, a power analysis was conducted using this method. A power level (1 -  $\beta$ ) of .80,  $\alpha$  = .05, the predicted effect size for H1b (r = .30), the correlation between the actor/partner predictor variables (r = .49 for positive affect), and the ICC for media attributions (r = .16) was specified. The table reported a minimum sample size of 97 -109 dyads (the range in the sample size reflects the ICC table values of .10 and .30. The sample size of N = 97 reflects the r = .10 ICC for media attributions and the N = 109 reflects the r = .30 ICC for media attributions). A second power analysis was conducted using the obtained effect size of the significant interaction effect (r = .14; H1a) rather than the predicted effect size (r = .30). The table reported a minimum sample size of 398 dyads. Therefore, this study's sample size (N = 87 dyads) may not have been adequate.

Despite the appeal of using the dyad as the unit of analysis, rather than MLM, when there is nonindependence, researchers note potential limitations. One noted limitation of using the dyad as the unit of analysis is ignoring the potential variance that exists in the individual-level of the data by focusing on the higher level of the nested data (O'Connor, 2004). Moreover, if there is nonindependence in the data, then the results may not be as informative as they could have been by examining both individual-level and dyad-level effects. It is also important to consider if aggregating the data are meaningful. That is, whether or not the group mean is meaningful to the questions being asked in the study (e.g., "Is it more important to know about the mean dyad effects or how individuals in the dyad influence each other?"). Overall, an a priori power

analysis is a helpful tool to ensure one's study has enough power to detect theoretically important effects. A discussion of the results using MLM follows.

#### **CHAPTER 5: DISCUSSION**

This study investigated how members of romantic couples manage conflict in CMC. Specifically, the experiment examined how individuals' sentiment towards their partners influences the attributions that they make about their partners' online conflict behaviors. This study also investigated the influence of media (a)synchronicity on the attributions that individuals make about their partners' conflict behaviors. The data were consistent with one hypothesis. Individuals who have greater pre-discussion relational satisfaction tend to make more dispositional attributions as their partners' positive conflict behaviors increase ("My partners' behavior reflects who s/he is") and less dispositional attributions as their partners' positive conflict behaviors decrease; individuals who have less pre-discussion relational satisfaction tend to make less dispositional attributions as their partners' positive conflict behaviors increase and more dispositional attributions as their partners' positive conflict behaviors decrease (H1a). Therefore, across media synchronicity conditions, individuals who have relatively more positive sentiment towards their partners tend to make relationally enhancing attributions for their partners' positive online conflict behaviors, and individuals who have relatively more negative sentiment towards their partners tend to make relationally diminishing attributions for their partners' positive online conflict behaviors. Relationally enhancing attributions refer to favorable attributions regarding a partner's behavior, whereas relationally diminishing attributions refer to unfavorable attributions regarding a partner's behavior. The results of this study are in line with the sentiment override concept (Weiss, 1980).

The sentiment override concept posits that the attributions individuals make for their partners' conflict behaviors are a function of the sentiment individuals have for their partners (Weiss, 1980). Individuals who have positive sentiment for their partners (i.e., unwavering

positive regard for their partner and their relationship) tend to perceive their partners' behaviors as more positive than they really are and make situational attributions for their partners' negative conflict behaviors and dispositional attributions for their partners' positive conflict behaviors. Conversely, individuals who have negative sentiment for their partners (i.e., unwavering negative regard for their partner and their relationship) tend to perceive their partners' behaviors to be more negative than they really are and make dispositional attributions for their partners' negative conflict behaviors and situational attributions for their partners' positive conflict behaviors. Because the results of this study are in line with the sentiment override concept, this study extends previous work on sentiment override in offline contexts by demonstrating its effect in CMC, which has never been done before this study.

In addition to examining how individuals' sentiment towards their partners overrides the attributions that they make for their partners' conflict behaviors, this study also investigated the influence of media synchronicity (i.e., degree to which individuals communicate in real time) on attributions in interpersonal conflict. Little is known about the potential moderating effect of media synchronicity in interpersonal conflict. Most of the research regarding interpersonal conflict examines the effect of the channel alone on relational outcomes (e.g., CMC and FtF communication), rather than investigates the effect of the channels and their degree of synchronicity on relational outcomes.

This study did not support media synchronicity theory (Dennis et al., 2008). Media synchronicity theory states that the process of conflict is best managed using a synchronous medium, rather than an asynchronous medium. The theory reasons that synchronous CMC is necessary to ensure that both parties reach a shared understanding of partners' interpretation of the conflict and its resolution. At the same time, media synchronicity theory also predicts that

familiarity could moderate the degree to which synchronicity is necessary in conflict, though the theory is not precise in its predictions. Although this study did not directly test familiarity or the need for media synchronicity, it did not demonstrate that media synchronicity affected interpersonal attributions, as dyads made the same attributions for their partners' online conflict behaviors regardless of media synchronicity. Because all dyadic participants were familiar with one another, it may appear that media synchronicity theory's proposition that familiarity reduces the impact of synchronicity is supported. However, the study's findings that the degree of positive or negative relational satisfaction affect judgments suggest that simple familiarity, without taking into account some quality of the familiar relationship, may be too simple.

Aside from the theoretical view of synchronicity, empirical precedents in previous research were not as clear as it first appeared. Asynchronous CMC had been found to have a negative impact on most relational and performance outcomes (Moon, 1999; Roseth et al., 2011). Yet, meta-analytic research in the negotiation domain suggested that asynchronous CMC may be beneficial in online conflict due to its disruptive nature (Swaab et al., 2011). Therefore, it was hypothesized that the disruptiveness of asynchronous CMC may be enough to offset the effect of individuals' negative sentiment towards each other and lead to a different pattern of attributions. That is, it was predicted that individuals who had greater relational satisfaction would continue to make relationally enhancing attributions for their partners' behaviors, regardless of media synchronicity. But individuals who had less relational satisfaction would make less relationally diminishing attributions in asynchronous CMC than they would in synchronous CMC, at least as employed in this study, may not be disruptive enough to offset negative sentiment override and modify individuals' attributions.

A re-examination of the meta-analytic evidence that was used to predict the moderation effect of media synchronicity on attributions in H3 suggests that the empirical precedents for the effect may not be valid. The meta-analysis revealed that negotiators who had a non-cooperative orientation (low concern for others and high concern for self) vs. a cooperative orientation (high concern for others and the relationship) performed better when they used an asynchronous medium (vs. a synchronous medium; Swaab et al., 2011). This suggested that asynchronous CMC might offset the influence of negative sentiment override. However, a closer look at the studies used in the meta-analysis shows that many of the results of these studies were confounded, and the issue speaks directly to definitions of synchronicity.

Often, CMC was labeled as asynchronous when it could just as plausibly be considered synchronous. Many of the studies used in the meta-analysis conflated the channel with media synchronicity. For instance, the following types of communication were coded as asynchronous (with their synchronous comparison group in parentheses) when they were not asynchronous communication by most definitions: real-time email exchanges (vs. synchronous FtF communication), real-time instant messaging (vs. synchronous FtF communication), communicating while standing side-by-side with one's partner (vs. synchronous FtF communication). It is possible that the positive effect of asynchronous CMC (vs. synchronous CMC) on performance represents the difference between CMC and FtF communication (i.e., amount of cues in an interaction), rather than the difference between synchronous and asynchronous CMC. As such, it is possible that the amount of cues in a conflict situation influences outcomes but it is still unknown if asynchronous CMC influences the outcomes according to the meta-analysis.

It is difficult to interpret further the unsupported hypothesis (H3: media synchronicity as

a moderator for attributions) because this is the first time synchronicity has been examined in interpersonal conflict. Therefore, it is hard to compare these results to previous studies to contextualize the findings. As stated, prior research has only looked at the impact of media synchronicity (synchronous CMC vs. asynchronous CMC) among strangers, rather than romantic partners. Likewise, research has only examined the impact of media synchronicity on different outcomes, such as persuasion, credibility, and performance in education and negotiation domains, whereas this study focused on the interpersonal context. At the same time, the novel nature of this study invites unexpected findings.

One unexpected finding of this study is the positive relationship between pre-interaction relational satisfaction and dispositional attributions. This effect occurred across every multilevel model for dispositional attributions. The more satisfied that individuals were in their relationships the more dispositional attributions they made for their partners' behaviors, as accounted for by sentiment override (Weiss, 1980). Research has shown that the greater relational happiness, commitment, and love individuals have for their partners, the more dispositional attributions they make for their partners, the more dispositional attributions they make for their partners, the more dispositional attributions they make for their partners' positive behaviors (e.g., being cheerful and supportive; Fletcher et al., 1987). Conversely, the less relational happiness, commitment, and love individuals have for their partners, they make for their partners' positive behaviors they make for their partners, the less dispositional attributions they make for their partners' positive behaviors. Likewise, other research has shown that dispositional attributions mediate the relationship between friends' (vs. strangers') self-disclosure and partner liking (Jang, Kashian, Shin, Dai, & Walther, 2014). The more positive behaviors that friends generate, the more dispositional attributions their friends make.

This notion raises the question of whether there was a base-rate effect in the current study, with regard to the frequency of positive vs. negative conflict behaviors that partners
exchanged. A paired sample *t*-test revealed that on average individuals in this study generated more positive behaviors (M = 0.29, SD = 0.17) than negative behaviors (M = 0.18, SD = 0.17), *t* (173) = 4.40, p < .001,  $\eta^2 = .10$ . Although the effect size is small, it is possible that individuals who had greater pre-interaction relational satisfaction made more dispositional attributions because their conflict conversations were comprised of more positive messages.

This research made important theoretical contributions to the theory of sentiment override. This study showed that the phenomenon of sentiment override (Weiss, 1980) applies to mediated communication, a concept that has never been applied to a CMC context before this study. It is now clear that across media and its degree of synchronicity, sentiment is an important predictor of attributions in online conflict. This study's findings are consistent with similar experimental research that investigated the effect of communication channel (synchronous CMC vs. FtF communication) and relational satisfaction on partner appraisals (positive or negative perceptions of partner support) in interpersonal conflict (Scissors, 2013). The results of Scissors' study revealed that channel had no impact on partner appraisals. Rather, relational satisfaction was the only positive predictor of partner appraisals. Individuals who had greater relational satisfaction perceived their partners to be more supportive. Combined with this experiment, both studies demonstrate how sentiment overrides both the communication channel that couples use to have interpersonal conflict and the channel's degree of media synchronicity.

This study is not without limitations. One limitation of this study is its ecological validity. Because dyads were instructed to have an online conflict conversation in a controlled environment with little else to do, it is possible that the lab setting coupled with a two-minute delay may not have sufficiently simulated asynchronous conflict situations couples have beyond the laboratory. For instance, outside of the lab, couples may have asynchronous exchanges with

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their partners in between work tasks, talking to colleagues or friends, attending meetings, and a multitude of other activities that individuals engage in on a daily basis. Moreover, because dyad members had little else to do except wait for their partners' messages (though they were instructed to pass the time how they wished, e.g., by playing cards, watching YouTube videos, etc., given they did not contact their partner using another medium) the delay and lightweight activities may not have been distracting enough to alter their attributions regarding their partners' behaviors. To address these limitations, future research could give participants additional activities that vary in cognitive load, immersion, or reward accrual to see if asynchronous media is helpful regarding conflict management in these instances that are more ecologically valid or if sentiment still overrides the quality of individuals' conflict outcomes among dissatisfied couples.

A second limitation concerns the possible mismatch between the conceptual definition of asynchronous CMC and its operational definition. It is possible that a two-minute delay may not be an accurate operationalization of asynchronous CMC. As such, the two-minute delay may not have been sufficient to elicit a different pattern of results in interpersonal attributions. As stated, a two-minute delay was chosen based on previous research (Moon, 1999) that used an instant messaging program. A two-minute delay was expected to be sufficient to influence changes in interpersonal attributions. Although the manipulation check was successful, and individuals reported that their partners' messages arrived at a faster rate when they used synchronous CMC than did those who used asynchronous CMC, the effect size was small,  $\eta^2 = .14$ . Along these lines, an analysis of over 16,000 responses extracted from a large company's database of email messages showed that the majority of employees respond to emails after six hours (68%), followed by five hours (66%), four hours (63%), and three hours (58%; Kalman & Rafaeli, 2005). Therefore, it is possible that the two-minute delay was not sufficient. Moreover, the

expectations of reply time may differ by medium. Email delays may be more acceptable than texting delays. To address this limitation, future research could perform a field study in which romantic partners have a natural conflict discussion using synchronous CMC or asynchronous CMC and provide transcripts of the conversation. This way, researchers can measure the average delay between asynchronous message exchanges and test its impact on attributions (in comparison to individuals who use synchronous CMC). Future research could also survey participants regarding the amount of time they spend exchanging messages when they engage in conflict using (a)synchronous CMC to operationalize asynchronous CMC.

Overall, this study explored an understudied and new phenomenon of online interpersonal conflict among romantic couples. This study demonstrates the importance of relational satisfaction on attributional outcomes in interpersonal conflict above and beyond media synchronicity. Most CMC research is about relationship initiation and impression formation. As CMC becomes integrated in our everyday lives, it is used for activities that tend to be avoided, such as conflict, yet few studies have looked at these activities. Therefore, it is important to investigate the dark side of CMC as well as the light side of CMC. In addition to looking at a new phenomenon in the CMC literature, this study also contributes to the literature because it uses a social analysis that involves one partner's responses to another in a dynamic fashion. In CMC, it is unusual to investigate how relational partners influence each other in conflict interactions. Often CMC research looks at individual effects, rather than social effects. Hopefully this study fosters interest in everyday activities that occur in CMC, but that we know little about, to encourage future theory development and debate.

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APPENDIX

## Appendix

### Measurement

## **Relational Satisfaction Facet and Global Items**

5-point Likert scale (1 = *Strongly disagree*, 5 = *Strongly agree*; Rusbult et al., 1998)

Facet Items

- Please indicate the degree to which you agree with each of the following statements regarding your current relationship.
  - a. My partner fulfills my needs for intimacy (sharing personal thoughts, secrets, etc.)
  - b. My partner fulfills my needs for companionship (doing things together, enjoying each other's company, etc.)
  - c. My partner fulfills my physical intimacy needs (holding hands, kissing, etc.)
  - d. My partner fulfills my needs for security (feeling trusting, comfortable, in a stable relationship, etc.)
  - My partner fulfills my needs for emotional involvement (feeling emotionally attached, feeling good when another feels good, etc.)

## Global Items

- 1. I feel satisfied with our relationship.
- 2. My relationship is much better than others' relationships.
- 3. My relationship is close to ideal.
- 4. Our relationship makes me very happy.
- 5. Our relationship does a good job of fulfilling my needs for intimacy, companionship, etc.

## **Partner's Behavior Attributions**

5-point Likert scale (1 = *Strongly disagree*, 5 = *Strongly agree;* Walther et al., in press) Dispositional Attribution

- 1. My partner's behavior reflects who he/she is.
- 2. My partner's behavior was consistent with his/her personality.
- 3. The way my partner behaved was determined by his/her personal nature.
- 4. My partner's conduct was typical for people with his/her personality.
- 5. My partner acted that way because of whom he/she is.
- 6. He/she was in the same mood before we started as when we finished.

### Situational Attribution

- 1. My partner's behavior was mostly shaped by the environment.
- 2. My partner may behave differently in front of other people.
- 3. My partner acted as s/he did because of the situation.
- 4. The way my partner behaved was typical in the setting.
- 5. He/she was just having a bad day.

### Media Attribution

- 1. Technology makes people behave this way.
- 2. My partner's behavior was mostly shaped by the media environment
- 3. The way my partner behaved was typical in an online environment
- 4. My partner's conduct is because he/she was doing that online
- 5. My partner behaved the way he/she did mainly because we had this conversation online.

## **Positive and Negative Affect Behavior Coding**

Specific Affect Coding System (SPAFF; see Coan & Gottman, 2007 for details)

Positive Affect Statements

- 1. Affection
- 2. Enthusiasm
- 3. Humor
- 4. Interest
- 5. Validation

## Negative Affect Statements

- 1. Anger
- 2. Belligerence
- 3. Contempt
- 4. Criticism
- 5. Defensiveness
- 6. Disgust
- 7. Domineering
- 8. Fear/tension
- 9. Sadness
- 10. Stonewalling
- 11. Threats
- 12. Whining

## Table A1

# Structure Matrix for Oblique Rotated Factors

		1	2	3	М	SD
Situationa	al Attributions					
1.	My partner's behavior was mostly shaped by the					
	environment.	.20	.56	.04	2.59	1.07
2.	My partner may behave differently in front of					
	other people.	.16	.16	.29	3.06	1.19
3.	My partner acted as s/he did because of the					
	situation.	.33	.78	.08	2.72	1.03
4.	The way my partner behaved was typical in the					
	setting.	.01	.06	.46	3.70	0.75
5.	He/she was just having a bad day.	.18	.19	06	1.97	0.90
Media Attributions						
6.	Technology makes people behave this way.	.50	.26	.19	2.57	0.99
7.	My partner's behavior was mostly shaped by the					
	media environment	.55	.38	.20	2.18	0.95
8.	The way my partner behaved was typical in an					
	online environment	.18	07	.72	3.18	1.03
9.	My partner's conduct is because he/she was doing					
	that online	.84	.24	.19	2.33	1.03
10	. My partner behaved the way he/she did mainly					
	because we had this conversation online.	.92	.30	.07	2.25	1.08

# Table A2

# Factor Loadings from the Confirmatory Factor Analysis

	SAT	DIS	MED	М	SD
Relational Satisfaction ( $\alpha = .90$ )					
1. I feel satisfied with our relationship.	0.87			4.14	0.91
2. My relationship is close to ideal.	0.73			3.59	1.09
3. Our relationship makes me very happy.	0.81			4.26	0.87
4. Our relationship does a good job of fulfilling my					
needs for intimacy, companionship, etc.	0.82			4.14	0.91
Dispositional Attributions ( $\alpha = .72$ )					
1. My partner's behavior reflects who he/she is.		0.65		4.28	0.8
2. My partner's behavior was consistent with his/her					
personality.		0.75		4.34	0.69
3. The way my partner behaved was determined by					
his/her personal nature.		0.48		4.20	0.71
4. My partner's conduct was typical for people with					
his/her personality.		0.35		3.86	0.81
Media Attributions ( $\alpha = .79$ )					
1. Technology makes people behave this way.			0.49	2.57	0.99
2. My partner's behavior was mostly shaped by the					
media environment			0.53	2.18	0.95
3. My partner's conduct is because he/she was doing			0.76	2.33	1.03

Table A2 (cont'd)

that online

4. My partner behaved the way he/she did mainly

because we had this conversation online.

0.79 2.25 1.08

*Note*.  $\chi^2(33) = 43.77, p = .10, RMSE = .02; N = 174$ 

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