

ABSTRACT

Negative Emotion in Romantic Relationships Predicts Change in Partner Attributions, Appraisal of Issue Importance, and Communication Behavior during Relationship Conflict

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This study investigated the function of hard, soft, and flat emotion in 67 undergraduate dating couples engaged in romantic relationship conflict. The primary objective of this study was to investigate associations among these three types of negative emotion and the attributions, appraisals, and communication behavior of romantic partners during relationship conflict. Hard emotion predicted increases in negative partner attributions and negative communication behavior while predicting decreases in positive communication. Soft emotion predicted increases in the appraisal of issue importance. Flat emotion, a less extensively studied emotion in the couples' therapy literature, predicted decreases in men's self-rated positive communication. A secondary objective of this study was to experimentally induce hard and soft emotion to determine whether emotion can be manipulated to effect immediate change in cognition and behavior. Given the inefficacy of the manipulation induction task used in this study, testing subsequent hypotheses related to this second objective was not feasible. However, the utility of a theory of emotion as a feedback system in couples' research is discussed.

Negative Emotion in Romantic Relationships Predicts Change in Partner Attributions,
Appraisal of Issue Importance, and Communication
Behavior During Relationship Conflict

by

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DEDICATION

To

Josie Maldonado and Josie Olsen,

for giving me the courage to persevere in life and on paper.

To

my husband Bo,

for marrying a frazzled graduate student.

CHAPTER ONE

Negative Emotion in Romantic Relationships Predicts Change in Partner Attributions, Appraisal of Issue Importance, and Communication Behavior during Relationship Conflict

Social affiliation is considered to be a basic psychological need (Ryan & Deci, 2000). One primary way in which adults satisfy this need is to form a stable, romantic relationship with another person. The benefits to forming and maintaining intimate relationships are far-reaching. For example, married people live longer, recover more quickly from mental and physical illnesses, and are less likely to engage in risk-taking behavior than those who are not married (for a review, see Coombs, 1991). From an evolutionary standpoint, the development of stable dyadic alliances served to protect humans from both physical and psychological distress (Baumeister & Leary, 1995; Buss, 1990; Zeifman & Hazan, 1997). Given the benefits of such alliances, it not surprising that people experience a great deal of negative emotion when the stability of a romantic relationship is threatened by conflict. The finding that escalation of negative emotion predicts relationship distress (Clements, Cordova, Markman, & Laurenceau, 1997) underscores the importance of investigating emotional processes in this context. Although, over the last two decades, several lines of research have advanced our understanding of the role played by negative emotion during romantic relationship conflict (e.g. Gottman, 1993; Johnson, 2002; Sanford, 2007a, 2007b) several ambiguities remain. This study aims to contribute to the couples' therapy literature by investigating associations between negative emotion and three conflict-related variables: partner attributions, appraisals of the issue's importance, and communication behavior. An important component of this investigation is the distinction between three types of negative

emotion that, according to recent literature (Sanford, 2007a), should associate differentially with conflict-related variables.

Distinguishing between Hard, Soft, and Flat Emotion

Traditionally, research on emotion in romantic relationships has lumped negative emotion into one category when examining associations between emotion, behavior, and cognition (e.g. Beach, 2001; Gottman & Levenson, 1986). However, more recent investigations of conflict in romantic relationships are beginning to differentiate between specific types of negative emotion (e.g. Gottman, McCoy, & Coan, 1996; Sanford, 2007a; Sanford, 2007b; Sanford & Rowatt, 2004). Many of these investigations stem from the theoretical grounding of a recent approach to couple's therapy that makes a distinction between selfish and pro-social emotion. Integrative behavioral couple therapy (IBCT) defines *hard emotion* as a selfish emotion that encompasses feelings of anger, contempt, and aggravation as well as other negative emotions associated with asserting power and control in a relationship (Christenson et al., 1995; Dimidjian, Martell, & Christensen, 2002; Jacobson & Christensen, 2000). *Soft emotion*, in contrast, is defined as a pro-social emotion that includes feelings of sadness, hurt, and other negative emotions associated with the experience or expression of vulnerability. Several factor analytic studies of emotion during marital conflict have strengthened the distinction between these two dimensions of negative emotion (Johnson, 2002; Sanford, 2007a; Sanford, 2007b; Sanford & Rowatt, 2004; Waldinger, Schulz, Hauser, Allen, & Crowell, 2004). More recently, a third type of negative emotion has been identified as an important factor in relationship conflict. In line with two-dimensional theories of affect (Watson, Wiese, Vaidya, & Tellegen, 1999), Sanford (2007a) defines *flat emotion* as a negative emotion characterized by negative affect and low arousal. Flat emotion may include sentiments such as apathy, boredom, and disinterest. Although

only one study to date has investigated flat emotion in the context of interpersonal relationships (Sanford, 2007a), theoretically, flat emotion should be associated with negative outcomes during relationship conflict that are distinct from those of hard and soft emotion. Understanding the function of these three types of negative emotion during relationship conflict is critical to the development of effective couples' therapy interventions.

The Expected Function of Emotion during Relationship Conflict

Despite a growing awareness of the role played by emotional factors in couple interactions, few theories of couples' psychotherapy conceptualize emotion as an independent variable that can have a predictable and causal effect on maladaptive cognition and behavior. However, more recent approaches, including IBCT and emotionally focused couples therapy (EFCT; Greenberg & Johnson, 1988; Johnson, 2004) regard emotion as a critical component of couple interactions. An underlying assumption in EFCT is that emotion, not simply a byproduct of cognitive interpretations of situations, can have a causal effect on partners' cognition and behavior (Greenberg & Johnson, 1988; Johnson, 2004). In EFCT, the goal is to create a secure bond between partners by increasing emotional awareness, facilitating emotion regulation, and replacing maladaptive emotions with more adaptive ones with the ultimate goal of replacing maladaptive behavioral responses during relationship conflict with more adaptive responses. Many clinical outcome studies have suggested that EFCT is efficacious and that focusing on emotion can have beneficial effects on a broad range of outcomes (Johnson, 2004). In IBCT, partners are encouraged to express soft emotion rather than hard emotion during relationship conflict because soft emotion is thought to promote safety, empathy, and acceptance between partners (Christenson et al., 1995; Dimidjian et al., 2002; Jacobson & Christensen, 2000). Research on couples therapy process consistently finds that a shift from expressing hard emotion to

expressing soft emotion during sessions often signals improvement (Cordova, Jacobson, & Christensen, 1998; Johnson & Greenberg, 1988). Along these lines, high levels of hard emotion have been associated with lower relationship satisfaction, while high levels of soft emotion have been associated with higher satisfaction (Sanford & Rowatt, 2004). Furthermore, converging research on samples of dating (Feeney, Noller, & Robers, 1998) and married couples (Finkel & Clark, 2002 in Sanford, 2007b) suggests that expressing soft emotion in response to a partner's negative behavior is associated with positive relationship outcomes, whereas the expression of hard emotion is associated with negative outcomes. Thus, negative emotion clearly plays an important role in couples' therapy. Understanding the precise mechanisms through which emotion exerts its influence is critical to the development of new, more effective, ways of using emotion to change maladaptive behavior during relationship conflict.

Associations between Negative Emotion and Social Cognition

While the precise roles of negative emotion during relationship conflict remain unclear, several lines of research have linked hard and soft emotion to a number of cognitive and behavioral social processes. Social psychological experiments have demonstrated that hard and soft emotion can effect change in social cognition. For example, anger triggers relatively heuristic thought (Lerner, Goldberg, & Tetlock, 1998; Tiedens & Linton, 2001) whereas sadness triggers active, deliberative thought (Alloy & Abramson, 1979; Ambady & Gray, 2002; Bodenhausen, Gabrield, & Lineberger, 2000; Gleicher & Weary, 1991; Wenzlaff, Wegner, & Rober, 1988). Bodenhausen, Sheppard, and Kramer (1994), directly comparing anger and sadness, found that sad people used more systematic, detail-oriented strategies, including relying less on stereotypes and other heuristic cues, than did angry people. Anger, but not sadness, has also been shown to create automatic prejudice toward an experimentally

created minimal outgroup (DeSteno, Dasgupta, Bartlett, & Cajdric, 2004). In addition to affecting the systematicity of thought, anger and sadness also affect the content of thought. For example, anger drives and is driven by thoughts of blame and punishment (Averill, 1983; Lazarus, 1991; Quigley & Tedeschi, 1996; Weiner, 1980). Sadness, on the other hand, revolves around thoughts of loss (Lazarus, 1991). Thus, hard and soft emotions appear to directly affect a number of social cognitive processes.

One cognitive process critical to the functioning of romantic relationships (Sanford, 2005; Sanford, 2006; Tashiro & Frazier, 2007) is attribution formation, the process of assigning meaning to events (Bradbury & Fincham, 1991; Fincham & Bradbury, 1992). Experimental inductions of emotion have demonstrated the causal effects of hard and soft emotions on attribution formation. For example, Keltner, Ellsworth, and Edwards (1993), found that participants primed for anger attributed the cause of ambiguous events to other people while those primed for sadness attributed ambiguous events to situational factors. A national field study that investigated Americans' attributions for the September 11th terrorist attacks found that anger triggered more causal attributions than did sadness (Small, Lerner, & Fischhoff, 2006). In the realm of couples research, Bradbury and Fincham's (1991) contextual model proposes that attributions for partner behavior are particularly important in couple relationships because they shape communication behavior (Bradbury, Beach, Fincham, & Nelson, 1996; Bradbury & Fincham, 1991). Three types of partner attributions have been found to covary with communication behavior (Bradbury et al., 1996; Bradbury & Fincham, 1992). *Causal attributions* determine who or what caused an event, *responsibility attributions* determine who is responsible for the event, and *blame attributions* establish who is at fault or liable for the event (Bradbury & Fincham, 1990). Sanford (2006) found that changes in these three types of attributions predicted corresponding changes in conflict

communication behavior among married couples. Specifically, increases in each of these types of partner attributions predicted increases in negative communication for both partners. These associations highlight the utility of examining links between negative emotion, a highly salient factor in conflict conversations, and partner attributions. Based on the theoretical underpinnings of IBCT (Dimidjian et al., 2002; Christenson, Jacobson, & Babcock, 1995; Jacobson & Christensen, 2000) and the social psychological literature described above (e.g. Keltner et al., 1993; Small et al., 2006), hard emotion, a selfish emotion that leads to more heuristic thinking, should predict increases in negative partner attributions. In contrast, soft emotion, a pro-social emotion associated with more deliberative thought processes, though also theoretically associated with increases in negative partner attribution during conflict simply due to the salience of emotion in this context, should produce smaller associations with this variable. Based on prior research associating flat emotion with withdrawal during conflict conversations (Sanford, 2007a), an increase in flat emotion might also predict withdrawal of attention. That is, a disinterested or apathetic partner is unlikely to spend time contemplating the source of a conflict. Thus, flat emotion should theoretically be unrelated to negative partner attributions.

Another cognitive process critical to the outcome of relationship conflict is the awareness of a particular issue's importance to the stability of the relationship. Variations in the appraisal of an issue's importance may lead to different levels of motivation for resolving specific relationship problems. Hard, soft, and flat negative emotion may shape this type of appraisal in distinct ways. Theoretically, hard emotion, a selfish emotion, should be inversely related to this type of cognition, as people experiencing strong hard emotion are expected to focus on selfish rather than social objectives. When concerned with selfish objectives, such as asserting power and control, partners may be less interested in resolving a conflict and

thus rate the issue at hand as less important. Sanford (2007b) found that husbands' hard emotion was inversely related to the appraisal of an issue's importance while wives' hard emotion was not significantly associated with this appraisal. Soft emotion, on the other hand, should theoretically be associated with pro-social motives. Accordingly, increases in both husband- and wife- soft emotion have been found to predict increases in their appraisals of an issue's importance to the relationship (Sanford, 2007b). This finding suggests that one beneficial effect of soft emotion might involve its shaping of partners' perception of conflicts. That is, soft emotion by highlighting the importance of an issue, may motivate partners to address the problem and thus facilitate the resolution of conflict. Partners experiencing flat emotion, including feelings such as apathy, boredom, and disinterest, are likely to minimize the importance of an issue. Thus, although no study has investigated the association between flat emotion and this appraisal during relationship conflict, theoretically, flat emotion should be inversely related to the appraisal of an issue's importance.

Negative Emotion and Behavioral Outcomes

In addition to uncovering associations between negative emotion and social cognition, research is beginning to link different types of negative emotion to differential communication patterns during relationship conflict. Understanding associations between negative emotion and communication behavior is critical given that communication in relationships predicts a number of important outcomes including relationship satisfaction, divorce, domestic violence, and physical health (Berns, Jacobson, & Gottman, 1999, Gottman, 1996; Karney & Bradbury, 1995; Kiecolt-Glaser et al., 1996; Sanford, 2006). Sanford (2007b), investigating marital and peer relationships, found that hard and soft emotion differentially predicted forms of communication behavior. Hard emotion predicted

increases in negative communication behaviors, including aspects of criticism and defensiveness, and decreases in positive communication behaviors, including careful listening and calm discussion. These detrimental changes were robust for both partners in both types of relationships. Such findings coincide with research associating hard emotion with power assertion and pursuit of self-centered goals (Sanford, 2007a). Soft emotion, though also associated with minimal increases in negative communication, has been found to generally correspond with beneficial effects. For example, perceived soft emotion in one's partner has been found to predict increased positive communication and increased conflict resolution (Sanford, 2007b).

Though flat emotion has received much less attention, a recent study suggests that flat emotion may be highly detrimental during relationship conflict. Sanford (2007a) finds that during conflict conversations between married partners, flat emotion is associated with withdrawal. Withdrawal during relationship conflict has generally been associated with detrimental consequences. For example, Gottman (1993) reviews research indicating that, during relationship conflict, a stonewalling response that involves the listener's withdrawal from interaction is predictive of divorce. Other laboratories report a similar response involving a demand-withdraw pattern of interaction in which one partner is critical and demanding while the other appears withdrawn, disengaged, and lacking in emotion expression (Christensen & Heavey, 1990; Heavey, Christensen, & Malamuch, 1995). This demand-withdraw pattern is associated with a decline in relationship satisfaction (Heavey et al., 1995). Withdrawal during conflict, theoretically a passive process, may be detrimental to relationships not because it increases negative communication but because it decreases positive communication. Given its detrimental correlates, flat emotion likely plays an important role during relationship conflict and merits further investigation in this context.

The Progression from Correlational to Experimental Research

Research on the role of negative emotion during couple conflict has progressed over the last decade. A number of correlational studies, reviewed above, have confirmed associations between negative emotion and detrimental cognition and behavior during interpersonal interactions. However, correlational research that investigates concurrent relationships between variables does not address the important question of whether negative emotion predicts change in cognition and communication behavior over time. If negative emotion directly influences either cognition or behavior, then it should predict *within-person* changes in these variables across time. Investigating within-person change is important to the study of relationship conflict, not only because most psychological processes happen within a person, but also because knowledge of within-person processes in couples therapy facilitates the development of more targeted interventions. Furthermore, within-person approaches to research are more effective at studying the rapid processes and rapidly varying outcomes that occur during couple conflict. Sanford's (2007a, 2007b) research, described above, has confirmed that negative emotion predicts within-person changes in cognition and communication behavior during relationship conflict.

Another major development in couples' research includes the use of both self- and partner-ratings of communication behavior. Though self-report measures are valuable, individuals may be biased when reporting their own behavior. Partner-reports on the other hand, provide an "outsider" view and although they may also be biased, are more likely to produce greater variation on outcome measures (Hoeffferth & Casper, 2007). Furthermore, partner-reports have been shown to correlate more strongly with outcome measures (Busby, Holman, & Taniguchi, 2001) and may reduce the potential for method variance in correlational analyses (Hoeffferth & Casper, 2007). Therefore, demonstrating that change in

behavior is observed by both the person engaging in the behavior and by that person's partner provides a more robust test of within-person change.

After the correlational methods described above, the next step in deciphering the role of emotion during couple conflict is to determine whether negative emotion *causes* change in cognition and behavior. Uncovering causal relationships among emotional, cognitive, and behavioral variables will aide clinicians in the development of effective interventions, those that target relevant variables, and efficient protocols, those that target relevant variables in an order that produces significant and timely results. For example, if research finds that hard emotion causes negative attributions, which in turn, cause negative communication behavior, focusing on behavioral change in therapy while ignoring emotion may delay or impede change. In order to demonstrate causal links between emotion, cognition, and behavior during couple conflict, investigations must manipulate emotion in this context. To date, only one investigation has experimentally manipulated emotion in order to assess the causal effects of negative emotion during relationship conflict. Tashiro and Frazier (2007) experimentally induced negative emotion and positive emotion and measured the effects of these conditions on maladaptive cognitions and behaviors in undergraduate dating couples. This study indicates that negative emotion causes more partner responsibility attributions than does positive emotion. Further, negative emotion causes an increase in maladaptive behaviors, including demanding and withdrawal. However, Tashiro and Frazier's (2007) use of negative emotion as a unitary construct limits the explanatory value of their results, given that the literature calls for a distinction between hard, soft, and flat negative emotion (Johnson, 2002; Sanford, 2007a; Sanford, 2007b; Sanford & Rowatt, 2004; Waldinger et al., 2004). Nonetheless, this study provides preliminary evidence for the causal effects of general negative emotion on cognitive and

behavior. This investigation also supports the basic tenets of Baumeister, Vohs, DeWall, and Zhang's (2007) theory of *emotion as a feedback system*, a new theory of emotion that may inform the study of negative emotion during relationship conflict and prove especially useful to experimental approaches.

Emotion as a Feedback System

The theory of emotion as a feedback system, built on numerous lines of research encompassing the fields of neuroscience, cognitive science, social psychology, personality psychology, and clinical psychology (e.g. Bradley, Greenwald, Petry, & Lang, 1992; Gollwitzer, 1999; Kiecolt-Glaser, & Glaser, 1988; Leith & Baumeister, 1996; Paton, Belova, Morrison, & Salzman, 2006; Pennebaker, Kiecolt-Glaser, & Glaser, 1988), espouses a dual process approach to emotion that differentiates between *automatic affect* and *conscious emotion*. Though the theory contends that these two types of emotional responses are probably interrelated and coordinated, it posits that each serves different functions within the emotional system. Automatic affect entails a twinge of feeling that arises rapidly, possibly within small fractions of a second, may dissipate just as quickly, and can be characterized by small or no bodily arousal. This type of emotional response consists simply of a feeling that something is good or bad, to be approached or avoided. Thus, automatic affective responses can provide direct and largely beneficial input into behavior control. In contrast, conscious emotion is typically slower to arise and dissipate. It is a state of conscious feeling that is typically characterized by physiological changes such as arousal. Baumeister et al.'s (2007) theory of emotion as a feedback system further suggests that conscious emotion is heavily saturated with cognitions and is normally itself the result of cognitions. This assertion coincides with neuroimaging research which has revealed that the neural systems of emotion interact extensively with those of cognitive processes (Ochsner & Phelps, 2007;

Phelps, 2005). On the basis of the distributed and overlapping substrates of emotion and cognition, one would expect emotion to have extensive effects on cognitive processing and vice versa. According to Baumeister et al.'s (2007) theory, full-blown conscious emotional experiences, rather than providing direct input into behavioral control, operate to further stimulate cognitive processing toward some outcome or behavior. More specifically, the effects of conscious emotion on cognitive processes emphasize thought processes that are designed to direct attention to relevant aspects of recent experience, so that the cognitive system will dwell on them, explore their implications, and distill whatever lessons are to be learned. Studies on the influence of emotion on cognitive mechanisms support this conjecture. For example, emotion, through the amygdala, has been found to influence attention (Lundqvist & Ohman, 2005), perception (Atkinson & Adolphs, 2005), and both consolidation and retention memory mechanisms (McGaugh, 2000). By facilitating learning, conscious emotion forges new associations between affect and various behavioral responses. In romantic relationships learning may occur through the process of attribution formation. According to Baumeister and colleagues (2007), such cognitions may later shape behavior through automatic affect without having to develop into full-fledged conscious emotion. This theoretical framework may be useful in understanding more precisely the mechanisms through which negative emotion shapes maladaptive communication behavior during relationship conflict. Testing this theory requires an experimental approach that manipulates emotion during relationship conflict.

Manipulating Emotion

Though few investigations of couple interactions have attempted to manipulate emotion during couple conflict, a number of social psychological studies have successfully induced specific types of emotion while investigating the effects of emotion on cognition.

Such investigations commonly use directed-writing tasks to induce emotion. Directed writing tasks typically ask participants to recall and describe an autobiographical event that made them feel the emotion of interest (e.g. angry or sad). This type of procedure was developed by Strack, Schwarz, and Gschneidinger (1985) and has been validated in several studies (see DeSteno et al., 2004; Dunn & Schweitzer, 2005; Keltner et al., 1993; Lerner & Keltner, 2001; Tiedens & Linton, 2001). Though directed writing tasks were designed to induce incidental emotions, state emotions unrelated to the subsequent tasks (see Loewenstein & Lerner, 2003), they have been found to influence the perception of situations unrelated to the event eliciting them (Desteno et al., 2004, Dunn & Schweitzer, 2005; Keltner et al., 1993; Lerner, Small, & Loewenstein, 2004).

The value of investigations using directed-writing tasks to induce emotion depends on the efficacy of this task in producing the emotion of interest. In order for this type of task to be successful several criteria must be met. First, participants must have available an emotional autobiographical memory to retrieve. The effects of emotion on episodic memory increase the likelihood that most research participants will meet this requirement. For example, emotion has been shown to enhance episodic memory for events (Christianson, 1992), and this advantage is more pronounced over time (Kleinsmith & Kaplan, 1963). Furthermore, emotional events tend to be recounted or rehearsed more often than neutral ones (Schacter, 1996) and the amount of rehearsal is generally associated with increased subsequent memory (Cohen, Conway, & Maylor, 1994). The second requisite of this induction procedure is that the prompt serve as a sufficient cue for the retrieval of an emotional event. As Buchanan (2007) indicates, the retrieval of an emotional event may be cued by direct exposure to a specific reminder of an emotional event, such as a picture, or by a partial reminder that initiates the processes required to retrieve the memory for that event.

The directed-writing emotion-induction task apparently functions as an adequate reminder given its success in evoking emotional autobiographical memories in prior investigations (e.g. Dunn & Schweitzer, 2005). Finally, the success of the induction task depends on the capacity of the retrieved memory to induce the expected emotion. Based on affective neuroscience literature, the emotion induction prompt and subsequent memory retrieval is expected to activate emotion-related brain areas (e.g. amygdala and medial prefrontal cortex) in much the same way as the original exposure to the emotional event (Smith, Dolan, & Rugg, 2004). During retrieval of emotional autobiographical memories, the emotional state is triggered through connections from the amygdala and medial prefrontal cortex to hypothalamic and brainstem centers whose activation leads to autonomic and somatic responses (Quirk, Likhtik, Pelletier, & Pare, 2003). Furthermore, several studies that prompt emotional autobiographical retrieval in order to induce specific emotions report the success of this method in producing conscious subjective emotional states (e.g. Dunn & Schweitzer, 2005; DeSteno et al., 2004; Keltner et al., 1993; Lerner & Keltner, 2001; Tiedens & Linton, 2001). Thus, directed-writing tasks should be effective in manipulating emotional states during couple conflict. It is important to acknowledge that prior research using this type of emotion induction procedure suggests that the induced emotional state lasts for 10 minutes or less (Fiedler, Nickel, Muehlfriedel, & Unkelbach, 2001; Gilboa, Roberts, & Gotlib, 1997; Seibert & Ellis, 1991; Varner & Ellis, 1998). For this reason, post-treatment tasks and assessments must be brief.

Overview of the Present Study

Objectives

This study pursued two objectives. The primary objective was to investigate associations between hard, soft, and flat emotion, and the attributions, appraisals, and communication behavior of romantic partners during relationship conflict. Toward this aim, it would be useful to replicate prior research findings linking these types of negative emotion to critical cognitive and behavioral processes. In addition to contributing to the couples therapy literature critical information toward the development of more effective clinical interventions, results of this investigation will determine whether the associations between emotional, cognitive, and behavioral variables found in marital relationships can be replicated in undergraduate dating relationships. Furthermore, by including both self- and partner-reports of behavior, this study intended to provide a less biased and more robust assessment of within-person change in communication behavior. A secondary objective was to determine whether emotion can be manipulated to effect immediate change in cognition and behavior and whether changes in communication behavior are mediated, as predicted by Baumeister et al.'s (2007) theory of emotion as a feedback system, by attribution formation.

Basic Study Design

Participating couples were randomly assigned to one of three conditions: hard emotion, soft emotion, or control condition. In a within-person design, each couple engaged in a pre-treatment conversation in which they discussed an unresolved issue in their relationship, completed an emotion induction task, and then engaged in a post-treatment conversation in which they discussed another unresolved issue. Prior to each conversation couples completed questionnaires assessing emotion, partner attributions, and appraisal of

issue importance. After each conversation, couples completed questionnaires assessing communication behavior. This investigation included only hard emotion and soft emotion treatment conditions since, as described above, these emotions have been well recognized in the couples' therapy literature as discrete negative emotions that *consistently* yield distinct associations with cognitive and behavioral variables. Furthermore, couples engaged in conflict conversations in a laboratory setting have been found to report higher levels of these emotions compared to flat negative emotion (Sanford, 2007a). Finally, hard and soft emotion conditions were included given that a number of prior studies have successfully manipulated these emotions using simple, directed writing tasks (e.g. DeSteno et al., 2004).

Hypotheses

In order to investigate associations between negative emotion and the attributions, appraisals, and communication behavior of romantic partners during relationship conflict this study tested the following set of hypotheses:

Negative partner attributions. Hard emotion was expected to predict within-person increases in negative partner attributions. Though soft emotion was also expected to predict increases in negative partner attributions, the regression effect of soft emotion on this variable was expected to be smaller than that of hard emotion.

Appraisal of issue importance. Soft emotion was expected to predict within-person increases in the appraisal of issue importance. Hard emotion and flat emotion were expected to predict within-person decreases in the appraisal of issue importance.

Communication behavior. Hard emotion and soft emotion were expected to predict within-person increases in negative communication and decreases in positive

communication. However, the regression effect of hard emotion on these variables was expected to be larger than that of soft emotion. Flat emotion, theoretically associated with withdrawal during conflict, was expected to predict within-person decreases in positive communication behavior. Changes in communication were expected to be reflected by both self- and partner- ratings.

In order to determine whether emotion can be manipulated to effect immediate change in cognition and communication behavior and whether changes in behavior are in line with Baumeister et al.'s (2007) theory of emotion as a feedback system, this study implemented the Baumeister et al.'s (2007) theory in developing a second set of hypotheses:

Effects of emotion manipulation. The treatment condition was expected to produce the expected increases in negative emotion. That is, at post-treatment assessment, participants in the hard emotion condition were expected to report more hard emotion than those in the soft emotion and control conditions. Participants in the soft emotion condition were expected to report more soft emotion than those in the hard emotion- and control conditions.

Effects of emotion on outcome variables. Compared to participants in the soft emotion and control conditions, those in the hard emotion condition were expected to report more negative partner attributions, more negative communication behavior, and less positive communication behavior from baseline to post-treatment assessment. Compared to participants in the hard emotion and control conditions, those in the soft emotion condition were expected to report higher appraisal of issue importance.

CHAPTER TWO

Methods

Participants

Participants included 67 heterosexual romantic relationship couples. At least one partner in the couple was an undergraduate student at Baylor University. Couples were recruited using Baylor University's Human Participation in Research (HPR) system, which allows students to participate in research in exchange for extra credit in HPR-enrolled courses within the Department of Psychology and Neuroscience. Initial efforts at recruiting couples through other methods were unsuccessful. In order to expedite recruitment, in addition to receiving extra credit, couples participating in this study also received a \$20 gift card to a local restaurant. The study announcement invited students to participate, with their romantic partner, in a study on "emotional memories in romantic relationships." All couples were required to be either married or in a dating relationship of at least three-month duration. This duration requirement was intended to ensure that each partner would be able to recall an important unresolved issue in the relationship. Feeney (2005), using a sample comprised mostly of first year undergraduate students and using a 3-month relationship duration requirement, found that this sample was capable of recalling important relationship transgressions that took place in the context of a dating relationship. Of the 67 couples only one was married. This couple had been married for only three months at the time of participation. One couple had been dating for only one month but was allowed to participate, as they had previously dated for a year and had recently reinstated the relationship. The sample was 69% Caucasian, 17% Hispanic, 8% Asian, and 6% African

American. The average age was 20 years ($SD = 3$, range = 18-32). One participant indicated, by signing the informed consent form, that he was 18 years old and later indicated, on a demographics questionnaire, that he was 17 years old. The experimenter later contacted this participant and verified that he was 18 years old. The average length of relationship was 21 months ($SD = 19$, range 1-113), and the average number of years in college was 2.5 ($SD = 1$, range 1-6). Participants represented a large range of religious backgrounds: 26% Protestant Christian, 16% Roman Catholic, 12% Evangelical Christian, 11% Jewish, 7% Muslim, 7% Atheist, and 3% Agnostic, and 16% Other.

Procedure

Participants completed an assessment session of approximately 90-minute duration in a laboratory. The session consisted of a series of computer administered questionnaires interspersed by two 10-minute conversations and a directed-writing task. Prior to their session, each couple was randomly assigned to either a hard emotion, soft emotion, or control condition. Additionally, one partner was randomly designated “Partner A” and the other designated “Partner B.”

Time 1 (Pre-Treatment) Assessment

After completing informed consent procedures, partners were escorted to different rooms where they completed a “Background Information Questionnaire,” which included demographic questions, a measure of relationship satisfaction, and measures of relationship avoidance and relationship anxiety. The measures of relationship functioning were included in this study given that prior studies have reported correlations between these variables and negative emotion (Feeney et al., 1998; Greenberg & Johnson, 1988; Jacobson & Christensen, 1996; Leary, 2002; Sanford & Rowatt, 2004). After completing the Background Information

Questionnaire each partner then completed a “Relationship Memory Identification Form” (adapted from Sanford, 2003b, 2003c), which instructed participants to recall a *specific incident*, (i.e. an event that actually happened) that is related to a current, important unresolved issue in their relationship. Participants were then instructed to describe (1) when the incident took place, (2) where the incident took place, (3) what happened, and (4) what the unresolved issue is. The instructions informed participants that they would later discuss this incident in a conversation with their partner. When both partners had identified a specific incident, two copies of each partner’s incident printed automatically, and each partner was provided and asked to read a copy of Partner A’s specific incident, labeled “Relationship Memory A.” Each partner then completed a “Time 1 Pre-Conversation Questionnaire,” which included measures of emotion, attributions, and appraisal of the issue’s importance that specifically pertain to Partner A’s specific incident. Using random assignment, Relationship Memory A was the woman’s identified unresolved issue for half of participating couples and was the man’s identified unresolved issue for the other half. In order to assure that each partner remembered both unresolved issues, prior to administering the pre-conversation questionnaire, participants answered the question “Do you remember the issue described on the form in the envelope?” using “yes” or “no” check boxes. All participants in this study indicated that they did remember the unresolved issue to be discussed by checking the “yes” box. After completing the pre-conversation questionnaire, participants were then reunited and seated together on a couch. Following the standard paradigm for assessing communication behavior (Gottman, 1994; Markman & Notarius, 1987; Weiss & Heyman, 1997), the experimenter asked the couple to spend ten minutes discussing Partner A’s specific incident (“Relationship Memory A”) and to attempt to resolve the issue. After completing their conversation, the couple was redirected to separate rooms. Each partner

then completed a “Time 1 Post-Conversation Questionnaire,” which included measures of both self- and partner- negative and positive communication behavior as perceived during the prior conversation. The pre- and post-conversation questionnaires administered at Time 1 (pre-treatment) served as baseline assessments of emotion, partner attributions, appraisal of importance, and communication behavior. Each partner then completed a directed-writing task, labeled “General Memory Task A,” that was designed to induce emotion, as described above. As previously noted, couples were randomly assigned to one of three conditions: hard emotion (i.e. anger), soft emotion (i.e. sadness), and control condition. The directed-writing task instructed participants assigned to either the hard or soft emotion conditions to “briefly describe three things that make you most [angry or sad, depending on the assigned condition].” After four minutes, the experimenter presented participants with a second page of instructions that asked participants to “describe in detail the one situation that has made you the most [angry or sad] you have been in your life, and describe it such that a person reading the description would become [angry or sad] just from hearing about the situation.” Participants had six minutes to complete this second task. Participants in the control condition had six minutes to “describe the last classroom you were in so that, from reading your description, someone else can picture it perfectly.” During the directed-writing task participants were asked to keep writing until the experimenter re-entered the room.

Time 2 (Post-treatment) Assessment

After completing the emotion induction task, participants read Partner B’s specific incident, labeled “Relationship Memory B,” and completed Time 2 Pre-Conversation Questionnaire. This questionnaire was identical to Time 1 Pre-Conversation Questionnaire except that all the questions pertain to Partner B’s specific incident. Partners were then reunited as before and spent ten minutes discussing Partner B’s specific incident. After

completing this second conversation, participants returned to their desks and completed a Time 2 Post-Conversation Questionnaire. This questionnaire was identical to Time 1 Post-Conversation Questionnaire but pertained to the conversation about Partner B's specific incident. This second set of pre- and post-conversation questionnaires functioned as post-treatment assessment of emotion, partner attributions, appraisal of the issue importance, and communication behavior. Finally, in order to increase the likelihood that participants would leave the experiment feeling neutral or positive rather than negative emotion, all participants completed a positive emotion induction task, General Memory Task B. The procedure for this induction was identical to the first emotion induction task but asked participants to write about a "happy" memory. Debriefing procedures included an overview of the study's objectives and hypotheses as well as a brief information session reviewing current couples' research on the role of emotion during relationship conflict.

Measures

All measures were computer-administered using a Microsoft Office Access (Microsoft Corporation, 2003) database and are included in Appendix A. The Background Information Questionnaire included demographic questions, a measure of relationship satisfaction, and measures of relationship avoidance and relationship anxiety. Each Pre-Conversation Questionnaire included a measure of emotional states, attributions, and the appraisal of issue importance. Each Post-Conversation Questionnaire included a measure of negative and positive communication behavior. Scale reliabilities for each measure are reported in Table 1 below.

Background Relationship Information

The Quality Marriage Index (QMI) (Norton, 1983) was used as a measure of the overall goodness of the relationship. The QMI was designed to assess the quality of a relationship without asking respondents to describe particular events or behaviors (e.g. communication) that might overlap with other aspects of relationship functioning. As a result, the QMI is widely used as a measure of a partner's global, subjective evaluation of the relationship. The wording on this measure was revised in order to refer to a general romantic relationship versus a marital relationship specifically. Another modification was the use of a 6-point rather than a 7-point scale on items 1-5 and a 6-point rather than a 10-point scale on item six. Relationship avoidance and anxiety were assessed using a shortened version of the Experiences in Close Relationships (ECR) questionnaire (Brennan, Clark, & Shaver, 1998) that includes an eight-item relationship avoidance scale and an eight-item relationship anxiety scale of adequate reliability. For avoidance and anxiety scale items, participants used a six-point scale to "indicate the extent to which each statement describes you."

Partner Attributions

To measure partner attributions, this study employed Sanford's (2005, 2006) adaptation of Fincham and Bradbury's (1992) Relationship Attribution Measure (RAM), a widely used measure of event-dependent attributions that has demonstrated adequate reliability in both original and modified forms. Sanford's (2005, 2006) adaptation of the RAM asks participants to make attributions for real rather than hypothetical events. After each communication exercise participants received the following instructions: "Listed below are thoughts people often have during a conflict. To what extent were you thinking these thoughts at the time of the interaction?" They then rated, on a six-point scale, their

agreement with six attribution items. For example, participants rated the extent to which they agreed with the statements: “my partner deserves to be blamed,” and “my partner did something on purpose that caused this conflict.”

Appraisal of Issue Importance

A single-item measure for assessing the extent to which the topic was perceived as important to resolve was added to each Pre-Conversation Questionnaire. As in Sanford (2007b), participants were asked to rate, on a six-point scale ranging from disagree strongly to agree strongly, their agreement with the following statement: “The topic of the upcoming conversation is extremely important.”

Emotional States

Prior to each conversation, emotional states were assessed using the original, 6-point scale format of the Couples Emotion Rating Form (CERF; Sanford, 2007a). The CERF, which has demonstrated good construct validity and reliability (Sanford, 2007a), includes a four-item hard emotion scale, a four-item soft emotion scale, and a four-item flat emotion scale. Hard emotion items include: “angry,” “annoyed,” “irritated,” and “aggravated.” Soft emotion items include: “sad,” “hurt,” “concerned,” and “disappointed.” Flat emotion items include: “bored,” “uninterested,” “indifferent,” and “disengaged.” Participants were asked to rate on a six-point scale the extent to which they agree that they feel each emotion during the specific incident, labeled either Memory A or Memory B.

Communication Behavior

Positive and negative communication behavior was assessed using two seven-item scales, developed by Sanford (2007b) and expanded on by Sanford (2007a), that have demonstrated adequate reliability. In the development of these scales, it was found that

associations between participant-reported self- and partner-communication behavior and observer-coded behavior were strong for each scale and for both partners. Using these scales each partner rated both their own and their partner's negative and positive communication behavior.

Table 1
Reliability Coefficients for each Scale

Scale	Men		Women	
	Time 1	Time 2	Time 1	Time 2
Relationship Satisfaction	0.91	--	0.90	--
Relationship Avoidance	0.69	--	0.76	--
Relationship Anxiety	0.82	--	0.85	--
Couples Emotion Rating Form	0.90	0.91	0.89	0.88
Negative Partner Attributions	0.80	0.87	0.84	0.95
Partner Negative Communication	0.74	0.80	0.75	0.86
Partner Positive Communication	0.83	0.90	0.87	0.92
Own Negative Communication	0.76	0.84	0.74	0.78
Own Positive Communication	0.84	0.88	0.79	0.85

CHAPTER THREE

Results

Initial Analyses

Descriptive Statistics

Means and standard deviations were computed for men and women on all variables, and these results are reported in Table 2. Participants in this study were relatively non-distressed, as suggested by high mean relationship satisfaction and low mean relationship avoidance and anxiety. Men reported significantly more relationship avoidance than women and more flat emotion at Time 2. Women reported more negative partner attributions at Time 1. There were no significant gender differences on the other variables.

Correlations between Emotion and Relationship Functioning Variables

Correlations between emotion variables and relationship satisfaction, relationship avoidance, and relationship anxiety were conducted in order to determine whether the associations between these variables coincide with associations previously reported in the literature. These correlations are reported in Table 3. In line with previous research (e.g. Sanford & Rowatt, 2004) results indicated that relationship satisfaction was negatively correlated with relationship avoidance and relationship anxiety. Of the three negative emotions included in this analysis, only flat emotion was significantly correlated with relationship functioning variables. More specifically, flat emotion was negatively correlated with relationship satisfaction and positively correlated with relationship avoidance. Additionally, women's flat emotion was positively correlated with relationship anxiety.

Table 2
Descriptive Statistics for Measures of Relationship Functioning, Emotion, and Outcome Variables

Variable	Time 1					Time 2				
	Men		Women		<i>t</i>	Men		Women		<i>t</i>
	<i>Mean</i>	Std. Deviation	<i>Mean</i>	Std. Deviation		<i>Mean</i>	Std. Deviation	<i>Mean</i>	Std. Deviation	
Relationship Satisfaction	5.29	0.64	5.34	0.64	0.52	--	--	--	--	--
Relationship Avoidance	1.98	0.64	1.77	0.61	1.95*	--	--	--	--	--
Relationship Anxiety	2.14	0.82	2.17	0.87	0.26	--	--	--	--	--
Hard Emotion	2.96	1.46	3.03	1.41	0.29	3.06	1.46	3.10	1.37	0.17
Soft Emotion	3.29	1.16	3.60	1.22	1.47	3.24	1.38	3.50	1.27	1.14
Flat Emotion	2.11	0.95	1.84	0.93	1.68	2.07	1.03	1.58	0.70	3.26**
Negative Partner Attributions	2.34	0.94	2.76	1.03	2.42*	2.76	1.16	2.80	1.39	0.19
Issue Importance	4.22	1.36	4.45	1.18	1.02	4.36	1.23	4.63	1.20	1.28
Negative Communication										
Self Reported	2.56	0.87	2.62	0.81	0.41	2.76	1.02	2.59	0.88	1.04
Partner Reported	2.52	0.89	2.45	0.85	0.48	2.74	1.01	2.61	1.02	0.74
Positive Communication										
Self Reported	5.07	0.65	5.09	0.64	0.23	4.85	0.88	4.96	0.71	0.84
Partner Reported	5.05	0.73	5.00	0.84	0.36	4.79	0.99	4.85	0.91	0.38

Note. * $p < .05$, ** $p < .01$

Results also indicated significant correlations between emotion variables. Men and women's hard emotion was positively correlated with soft emotion but only men's hard emotion was correlated positively with flat emotion.

Table 3
Correlations Between Emotion and Relationship Functioning Variables

Variable	Hard Emotion at T2	Soft Emotion at T2	Flat Emotion at T2	Relationship Satisfaction	Relationship Avoidance	Relationship Anxiety
Hard Emotion at T2	--	.46**	.19	-.21	.11	.20
Soft Emotion at T2	.50**	--	-.03	-.16	-.03	.24
Flat Emotion at T2	.35**	-.10	--	-.38**	.54**	.44**
Relationship Satisfaction	-.20	-.09	-.27*	--	-.64**	-.64**
Relationship Avoidance	.22	-.02	.27*	-.47**	--	.45**
Relationship Anxiety	.19	.18	.07	-.39**	.29*	--

Note. T2 = Assessed at Time 2. Data from men ($n = 67$) are reported below the diagonal and data from women ($n = 67$) are above the diagonal. * $p < 0.05$. ** $p < 0.01$.

Correlations between Emotion and Outcome Variables

Correlations between emotion variables and outcome variables were computed in order to examine whether associations between these variables coincide with this study's hypotheses. These correlations are reported in Table 4.

Correlations between emotion predictors and negative partner attributions. As hypothesized, men and women's hard emotion was positively correlated with negative partner attributions. For women, this correlation was significant across both assessments; for men this correlation was only significant at Time 2. As expected, soft emotion also correlated positively with negative partner attributions. This correlation was significant for women across both

assessments but only significant for men at Time 2. An unexpected result was flat emotion's positive correlation with negative attributions for both men and women at Time 2.

Correlations between emotion predictors and the appraisal of issue importance. As hypothesized, men and women's soft emotion was positively correlated with the appraisal of issue importance across both assessments. However, at Time 2, men and women's hard emotion also correlated positively with this appraisal. This association runs contrary to the hypothesis that hard emotion would predict decreases in the appraisal of issue importance. Also contrary to this study's hypotheses, flat emotion did not correlate significantly with this variable.

Correlations between emotion predictors and communication behavior. Correlations between hard emotion and communication behavior generally supported this study's hypotheses. That is, men and women's hard emotion was positively correlated with self-rated negative communication behavior and negatively correlated with self-rated positive communication behavior across both assessments. Correlations between hard emotion and partner-rated negative communication differed slightly between men and women. While women's hard emotion was positively correlated with partner-rated negative communication across both assessments, men's hard emotion was positively correlated with partner-rated negative communication only at Time 1. Furthermore, only men's hard emotion correlated significantly with partner-rated positive communication across both assessments while women's hard emotion correlated with this variable only at Time 1. Correlations between soft emotion and communication behavior were generally non-significant. Only men's soft emotion, assessed at Time 2, correlated positively with self-reported negative communication behavior. As hypothesized, flat emotion was negatively correlated with positive

communication behavior. However, while women's flat emotion correlated negatively with self-rated positive communication across both assessments, this association was significant for men only at Time 2. Further, men and women's flat emotion was negatively correlated with partner-rated positive communication only at Time 2. The positive correlation between men's flat emotion and self-reported negative communication at Time 2 was unexpected. Taken together, the examined correlations provide useful information about associations between variables but do not provide information about how one variable predicts change in another across time and do not take into account the non-independence of the obtained couple data.

The Actor Partner Interdependence Model

In order to determine whether negative emotion predicted the expected within-person changes in partner attributions, appraisal of issue importance, and communication behavior this study tested hypotheses using structural equation modeling (SEM) and the LISREL 8.80 statistical program (Joreskog & Sorborn, 1993). To account for the non-independence of the obtained couple data this study utilized the actor-partner interdependence model (APIM; Kashy & Kenny, 1999), a dyadic data analytic method that has proven a useful tool in couples research. In an APIM, there are two dyad members and at least two variables, a predictor and an outcome variable, for each. When dyad members are distinguishable, as is the case in this sample of heterosexual romantic couples, there are potentially two actor effects: one for the effects of the man's predictor on the man's outcome and one for the effect of the woman's predictor on the woman's outcome. There are also potentially two partner effects, one for the effect of the man's predictor on the woman's outcome and one for the effect of the woman's predictor on the man's outcome.

Table 4
Correlations between Emotion Variables and Outcome Variables

Variable		Hard Emotion	Soft Emotion	Flat Emotion	Negative Attributions	Issue Importance	Negative Communication		Positive Communication	
							Self Report	Partner Report	Self Report	Partner Report
Conversation 1										
	Hard Emotion	--	.43**	-.02	.60**	.11	.38**	.35**	-.31*	-.38**
	Soft Emotion	.57**	--	-.16	.33**	.45**	.20	.23	-.07	-.11
	Flat Emotion	.30*	.22	--	.13	-.09	.10	.07	-.30*	-.17
	Negative Attributions	-.07	.00	.01	--	.09	.47**	.42**	-.30*	-.29*
	Issue Importance	.01	.38**	.15	.07	--	.13	.01	-.04	.11
	Negative Communication:									
	Self Report	.31*	.08	.20	.04	.04	--	.53**	-.52**	-.57**
	Partner Report	.17	.09	.21	.09	.03	.55**	--	-.26*	-.62**
	Positive Communication:									
	Self Report	-.30*	-.14	-.18	-.15	.08	-.46**	-.43**	--	.44**
	Partner Report	-.30*	-.12	-.19	-.17	.02	-.33**	-.68**	.48**	--
Conversation 2										
	Hard Emotion	--	.46**	.19	.64**	.25*	.35**	.30*	-.26*	-.23
	Soft Emotion	.50**	--	-.03	.40**	.48**	.17	.18	-.18	.02
	Flat Emotion	.35**	-.10	--	.29*	-.21	.22	.16	-.37**	-.26*
	Negative Attributions	.61**	.29*	.27*	--	.22	.48**	.42**	-.43**	-.36**
	Issue Importance	.37**	.65**	-.12	.13	--	.07	.07	.06	.01
	Negative Communication:									
	Self Report	.60**	.34**	.30*	.43**	.30*	--	.53**	-.59**	-.53**
	Partner Report	.39**	.15	.24	.32**	.17	.55**	--	-.41**	-.68**
	Positive Communication:									
	Self Report	-.40**	-.09	-.52**	-.19	.03	-.63**	-.44**	--	.59**
	Partner Report	-.37**	-.16	-.28*	-.26*	-.08	-.45**	-.79**	.52**	--

Note. Correlations for men are below the diagonals and correlations for women are above the diagonals. * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$

In addition to actor and partner effects, each APIM model tested in this study also included the effects of each outcome variable measured at Time 1 on that outcome variable measured at Time 2. Controlling for Time 1 measurements enabled the APIM models tested in this study to predict change in the outcome variable over time. Finally, there are at least two correlations in an APIM. First, men and women’s predictors may be correlated. Second, the residual non-independence in outcome scores is represented by the correlation between the error terms in men and women’s outcome. This second correlation represents the non-independence not explained by the APIM. Figure 1 depicts a conceptual diagram of the basic model evaluated in this study.

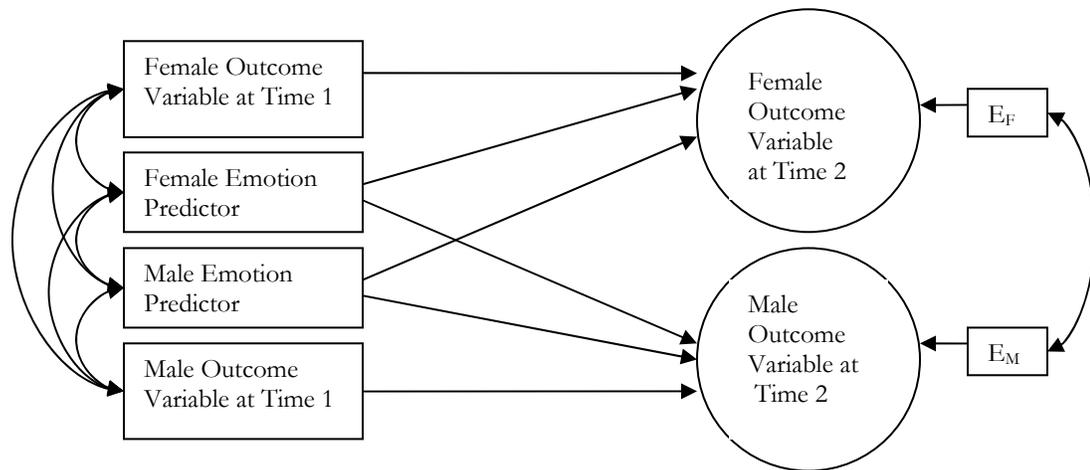


Figure 1. Conceptual Path Diagram for Basic Actor-Partner Interdependence Model. E_F = unexplained variance in female outcome, E_M = unexplained variance in male outcome; curved arrows represent correlations, straight arrows represent paths from predictor to outcome variable.

Establishing Base Models

The first step in establishing base APIM models was to determine whether the data indicates the presence of gender effects. Theoretically, there is no reason to expect different effects for women and men, and if there is no difference, then estimates will be more accurate and the analyses will be more powerful if both genders are combined together to

estimate each effect. Therefore, in constructing base APIM models, gender differences were initially constrained to be invariant for all paths in each model. If these models fit well based on chi-square, comparative fit index (CFI), and standardized root mean square residual (SRMR) values, the model was accepted. If the constrained model indicated poor fit, then chi-square difference tests were used to determine which pathway suggested a gender difference. That is, each model was tested against a less parsimonious model by unconstraining one path at a time and then comparing the fit of the constrained model to that of the unconstrained model by applying the chi-square difference test and examining CFI and SRMR of each model. The chi-square difference test was computed as the difference of the model chi-square for the constrained and the unconstrained model for one degree of freedom. Goodness of fit was indicated by a CFI greater than .95 and a SRMR less than .09 (Hu & Bentler, 1999). A model was rejected only if *both* of the following criteria were met: 1) constraining paths to be equal produced a significant chi square change, and 2) the overall fit of the model with constrained paths was poor. If both of these criteria were not met, the model was accepted. Chi square difference test values and fit statistics for all accepted models are reported in Table 5. Constraining the partner effect pathways in each model did not produce a significant chi square change and did not lower the overall fit of the models. Therefore, there is no strong evidence for gender differences when considering the extent to which a person's outcome is predicted by his or her partner's emotion. Actor effect paths were constrained for all but one model. In modeling the effects of flat emotion on positive self-rated communication behavior the chi square difference test and the examination of fit statistics indicated that constraining men and women's actor effects as equal produced a poor model fit. This indicates a gender difference in terms of flat emotion predicting positive communication behavior. The nature of this gender

difference will be addressed in the following section. Path diagrams were constructed for each accepted model and these are included in Appendix B.

Main APIM Results

SEM was used to test the APIM models of hard, soft, and flat emotion as predictors of partner attributions, appraisals, and communication behavior of romantic partners during relationship conflict. Standardized regression coefficients for all pathways in each accepted APIM model were computed and are reported in Tables 6-8. These results will subsequently be referred to as the “main APIM results.”

Did hard and soft emotion predict increases in negative partner attributions? Results indicated that, as hypothesized, both hard and soft emotion predicted increases in negative partner attributions. Differences in size between the actor effects of hard and soft emotion on this variable were examined by subsequent analyses, reported below. Partner effects were also found, with men’s hard and soft emotion predicting decreases in women’s negative partner attributions and women’s hard and soft emotion predicting decreases in men’s negative attributions. Notably, women’s, but not men’s, baseline negative partner attribution ratings predicted increases in partner attribution ratings at Time 2.

Did hard, soft, and flat emotion predict the expected changes in the appraisal of issue importance? As hypothesized, soft emotion predicted increases in the appraisal that an issue is important to resolve and flat emotion predicted decreases in this appraisal. An unexpected result was hard emotion’s positive regression effect on this variable.

Table 5
Chi Square Difference Test Values and Fit Statistics for Accepted Actor-Partner Interdependence Models

Predictor	Outcome Variable	Gender Differences	χ^2 Difference	<i>df</i>	CFI	SRMR
Hard Emotion	Negative Partner Attributions	BE	3.27	2	.96	.06
	Issue Importance	None	.17	3	1.00	.01
	Negative Communication—Self Report	None	2.17	3	1.00	.06
	Negative Communication—Partner Report	None	.89	3	1.00	.02
	Positive Communication—Self Report	BE	4.92	2	.91	.10
	Positive Communication—Partner Report	None	2.24	3	1.00	.05
Soft Emotion	Negative Partner Attributions	None	4.09	3	.83	.09
	Issue Importance	None	1.61	3	1.00	.03
	Negative Communication—Self Report	None	2.02	3	1.00	.05
	Negative Communication—Partner Report	None	1.35	3	1.00	.04
	Positive Communication—Self Report	BE	.65	2	.91	.09
	Positive Communication—Partner Report	None	2.27	3	.99	.07
Flat Emotion	Negative Partner Attributions	None	3.17	3	.93	.08
	Issue Importance	None	3.57	3	1.00	.04
	Negative Communication—Self Report	BE	2.52	2	.83	.09
	Negative Communication—Partner Report	None	1.90	3	1.00	.05
	Positive Communication—Self Report	FE ^a	2.88	1	.95	.07
	Positive Communication—Partner Report	None	4.77	3	.97	.07

Note. All χ^2 Difference values are non-significant. BE = effect of baseline score on outcome variable was unconstrained; FE^a = actor effect pathway for Flat Emotion Predictor was unconstrained; *df* = χ^2 difference test degrees of freedom; CFI = Comparative Fit Index; SRMR = Standardized Root Mean Residual

Table 6
Pre-Conversation Hard Emotion Predicting Outcomes at Time 2: Standardized Coefficients

Time 2 Outcome	Actor Effect	Partner Effect	Time 1 Score on Outcome
Negative Attributions	0.59***	-0.26**	FE = .35** MA = .03
Issue Importance	0.18*	0.02	0.35*
Negative Communication			
Self Report	0.40***	-0.01	0.45***
Partner Report	0.31**	0.10	0.33**
Positive Communication			
Self Report	-0.24*	-0.07	FE = .49** MA = 0
Partner Report	-0.24**	-0.04	0.44***

Note. FE = Female, MA = Male; * $p < .05$, ** $p < .01$, *** $p < .001$

Table 7
Pre-Conversation Soft Emotion Predicting Outcomes at Time 2: Standardized Coefficients

Time 2 Outcome	Actor Effect	Partner Effect	Time 1 Score on Outcome
Negative Attributions	0.38**	-0.25*	0.32**
Issue Importance	0.39**	0.05	0.34**
Negative Communication			
Self Report	0.22*	-0.13	0.50***
Partner Report	0.18*	-0.04	0.38**
Positive Communication			
Self Report	-0.15*	0.00	FE = .50** MA = -.01
Partner Report	-0.13	0.08	0.49***

Note. FE = Female, MA = Male; * $p < .05$, ** $p < .01$, *** $p < .001$

Did hard, soft, and flat emotion predict the expected changes in communication behavior? As hypothesized, hard emotion predicted increases in negative communication behavior and decreases in positive communication behavior, observed in both self- and partner-ratings. Soft emotion also predicted increases in self- and partner-rated negative communication and decreases in self-rated positive communication. Additional analyses, reported below, were

employed to determine whether there was a significant difference between the effects of hard and soft emotion on communication. As hypothesized, flat emotion predicted decreases in partner rated positive communication for both men and women and decreases in men’s self-rated positive communication. An unexpected result was flat emotion’s prediction of increased partner-rated negative communication. Notably, in all models of emotion predicting self-reported positive communication, women’s, but not men’s, baseline self-rated positive communication predicted increases in self-rated positive communication at Time 2.

Table 8
Pre-Conversation Flat Emotion Predicting Outcomes at Time 2: Standardized Coefficients

Time 2 Outcome	Actor Effect	Partner Effect	Time 1 Score on Outcome
Negative Attributions	0.01	0.01	0.32**
Issue Importance	-0.04*	0.00	0.34*
Negative Communication			FE = .49**
Self Report	0.00	0.04	MA = .04
Partner Report	0.07**	-0.03	0.30**
Positive Communication			FE = .51**
Self Report	FE = 0 MA = -.09*	-0.02	MA = -.02
Partner Report	-0.05*	0.00	0.42**

Note. FE = Female, MA = Male; * $p < .05$, ** $p < .01$

Testing for Differences between the Effects of Emotion Predictors on Outcome Variables using Models with Two Emotion Predictor Variables

In order to test for the hypothesized differences in size between the regression effects of hard, soft, and flat emotion on outcome variables, additional APIMs which included two emotion variables as predictors were examined. In addition to testing for differences between the effects of each emotion, this analysis clarified the extent to which

APIM results represented either unique effects based on the distinctive features of each emotion or general effects based on the overlap of each emotion variable with general negative affect. Hypothesized differences in size between the regression effects of emotion predictors on each outcome variable were addressed as follows:

Negative partner attributions. This study hypothesized that both hard and soft emotion would predict within-person increases in negative partner attributions but that the regression effect of hard emotion on this variable would be larger than that of soft emotion. In order to determine whether there was a significant difference in size between the actor effects of hard and soft emotion on negative partner attributions, a model including both hard and soft emotion as predictors was tested.

Appraisal of issue importance. This study hypothesized that soft emotion would predict within-person increases in the appraisal of issue importance while hard and flat emotions would predict within-person decreases in this variable. No differences in regression effect size between emotion predictors were hypothesized. However, the main APIM results indicated that both soft and hard emotion positively predicted increases in the appraisal of issue importance. In order to clarify these results, two additional models were constructed. One included both hard and soft emotion as predictors of the appraisal of issue importance while the other included soft and flat emotion as predictors.

Communication behavior. This study hypothesized that both hard and soft emotion would predict within-person increases in negative communication and decreases in positive communication; however, compared to soft emotion, hard emotion was expected to produce a larger regression effect on communication behavior. Flat emotion was expected to predict within-person decreases in positive communication; however, main APIM results

indicated that flat emotion also predicted increases in partner-rated negative communication. In order to test for a difference in size between hard, soft, and flat emotion's predictive effects on communication behavior and to clarify flat emotion's effects on negative communication, two sets of models were constructed and tested. One set of models included both hard and soft emotion as predictors of communication behavior and the other included hard and flat emotion as predictors.

Testing Models with Two Emotion Predictor Variables

In testing models with two emotion predictors, in addition to the constraints on gender differences already established by prior analyses, an additional constraint was added to each model. Pathways that indicated a significant regression effect in the main APIM results reported above were constrained to be equal across emotion predictors. The unconstrained models were tested against the constrained models using the chi-square difference test and an examination of each model's CFI and SRMR. The same criteria used when examining gender differences, reported above, was used in comparing the unconstrained to the constrained models. Chi square difference test values and fit statistics for all examined models are reported in Table 9.

Is there a difference between the effects of hard and soft emotion on negative partner attributions?

The main APIM results reported above indicated that both hard and soft emotion predicted increases in negative partner attributions. Constraining the actor effects of hard and soft emotion on negative partner attributions to be equal produced a significant chi square difference and the constrained model produced a poor overall fit. Furthermore, standardized regression coefficients listed in Table 10 indicate that, when controlling for

Table 9
Chi Square Difference Test Values Obtained when Comparing Unconstrained to Constrained APIMs with Two Emotion Predictors and Fit Statistics for the Constrained APIMs

Predictors	Outcome Variable	Pathways Constrained as Equal	χ^2 Difference	<i>df</i>	CFI	SRMR
Hard Emotion and Soft Emotion	Negative Attributions	HE ^a = SE ^a	9.61**	1	.94	.07
		HE ^p = SE ^p	.98	1	1	.07
	Issue Importance	HE ^a = SE ^a	7.39*	1	1	.03
	Negative Communication—Self Report	HE ^a = SE ^a	6.34*	1	1	.06
	Negative Communication—Partner Report	HE ^a = SE ^a	2.01	1	1	.03
	Positive Communication—Self Report	HE ^a = SE ^a	.85	1	1	.08
	Positive Communication—Partner Report	HE ^a = SE ^a	.36	1	1	.05
Soft Emotion and Flat Emotion	Issue Importance	FE ^a = SE ^a	24.73***	1	.50	.11
Hard Emotion and Flat Emotion	Negative Communication—Partner Report	HE ^a = FE ^a	4.77*	1	1	.05
		HE ^a = FE ^a	11.09***	1	.93	.10
	Positive Communication—Partner Report	HE ^a = FE ^a	4.40*	1	1	.07

Note. * $p < .05$; HE^a = actor effect pathway for Hard Emotion Predictor; HE^p = partner effect pathway for Hard Emotion Predictor; SE^a = actor effect pathway for Soft Emotion Predictor; SE^p = partner effect pathway for Soft Emotion Predictor; FE^a = actor effect pathway for Flat Emotion Predictor; *df* = χ^2 Difference Test degrees of freedom; CFI = Comparative Fit Index of Constrained Model; SRMR = Standardized Root Mean Residual of Constrained Model

hard emotion, the actor effect of soft emotion on negative partner attributions, indicated by the main APIM results, becomes nonsignificant. Though this study did not include hypotheses regarding partner effects, the main APIM results indicated significant partner effects in models of hard and soft emotion predicting negative partner attributions, and therefore this study tested for differences in size between the regression effects of hard and soft emotion on this variable. Constraining the partner effects of hard and soft emotion on negative partner attributions to be equal did not produce a significant chi square difference and did not change the overall fit of the model. However, as listed in Table 10, when controlling for hard emotion, the partner effect of soft emotion on negative partner attributions, indicated by the main APIM results, becomes nonsignificant. Taken together, these results augment the results of the main APIM analyses and support this study's hypotheses, which predicted that the regression effects of hard emotion on negative partner attributions would be larger than those of soft emotion.

Is there a difference between the effects of hard, soft, and flat emotion on the appraisal of issue importance? The main APIM results reported above indicated that both hard and soft emotion predicted increases in the appraisal of issue importance while flat emotion predicted decreases in this variable. In order to test for differences in size between the actor effects of hard and soft emotion on the appraisal of issue importance, these actor effects were constrained to be equal. Constraining the actor effects of hard and soft emotion on the appraisal of issue importance to be equal produced a significant chi square difference but did not reduce the overall fit of the model. APIM results in Table 10 indicate that, when controlling for soft emotion, the actor effect of hard emotion on the appraisal of issue importance, indicated by the main APIM results, became nonsignificant. This result clarifies

Table 10
*Results of APIMs Including Both Hard and Soft Emotion as Predictors
of Outcome Variables at Time 2: Standardized Coefficients*

Time 2 Outcome	Hard Emotion Predictor Paths		Soft Emotion Predictor Paths		Time 1 Score on Outcome
	Actor Effect	Partner Effect	Actor Effect	Partner Effect	
Negative Attributions	.56***	-.22***	.08	-.08	FE = .36*** MA = .03
Issue Importance	0	.02	.39***	.04	.34**
Negative Communication					
Self Report	.39***	.04	.04	-.11	.46***
Partner Report	.28**	.13	.05	-.05	.35***
Positive Communication					
Self Report	-.21*	-.07	-.05	0	FE = .55*** MA = -.01
Partner Report	-.22**	-.09	-.03	.11	.46***

Note. FE = Female, MA = Male; * $p < .05$, ** $p < .01$, *** $p < .001$

the unexpected finding, indicated by main APIM results, that hard emotion predicted increases in the appraisal of issue importance. In order to test for differences in size between the actor effects of soft and flat emotion on the appraisal of issue importance, these actor effects were constrained to be equal. Constraining the actor effects of soft and flat emotion on the appraisal of issue importance to be equal produced a significant chi square difference and also decreased the overall fit of the model. This suggests a significant and substantial difference between the effects of soft and flat emotion on this variable. APIM results listed in Table 11 indicate that, after controlling for soft emotion, the actor effect of flat emotion on the appraisal of issue importance, indicated by the main APIM results, became nonsignificant.

Table 11
Results of APIM Including Both Flat Emotion and Soft Emotion as Predictors of Appraisal of Issue Importance at Time 2: Standardized Coefficients

	Flat Emotion Predictor Paths		Soft Emotion Predictor Paths		Time 1 Score on Outcome
	Actor Effect	Partner Effect	Actor Effect	Partner Effect	
Issue Importance	-.04	.04	.39***	.07	.34**

Note. FE = Female, MA = Male; * $p < .05$, ** $p < .01$, *** $p < .001$

Is there a difference between the effects of hard, soft, and flat emotion on communication variables?

The main APIM results reported above indicated that both hard and soft emotion predicted increases in self- and partner-rated negative communication and decreases in self-rated positive communication. Constraining the actor effect of hard and soft emotion on self-reported negative communication to be equal produced a significant chi square difference; however, this constraint did not decrease the overall fit of the model, suggesting that the difference between effects was not substantial. This suggests that the actor effects of hard emotion on self-rated negative communication were only slightly larger than those of soft emotion. Despite this small difference, as reported in Table 10, after controlling for hard emotion the actor effect of soft emotion on self-rated negative communication becomes nonsignificant. Constraining the actor effects of hard and soft emotion on partner-reported negative communication, self-reported positive communication, and partner-reported positive communication did not produce a significant chi square and did not affect the overall fit of these models. However, after controlling for hard emotion, the actor effects of soft emotion on these variables, indicated by main APIM results, become nonsignificant. This suggests that, after controlling for soft emotion, the actor effects of hard emotion on these variables remain significant, but after controlling for hard emotion, soft emotion no longer significantly predicts change in communication variables. When comparing the

effects of hard and flat emotion on communication variables, constraining the actor effects of hard and flat emotion to be equal produces a significant chi square difference across all three models listed in Table 9. However, the only constraint that decreased model fit was the constraint on flat and hard emotion actor effects predicting self-rated positive communication. As listed in Table 12, the actor effects of flat emotion on partner-rated negative communication and partner-rated positive communication, derived from the main APIM analyses, become nonsignificant after controlling for hard emotion while the actor effect of flat emotion on self-rated positive communication remains significant. Taken together these results indicate that actor effects of hard emotion on communication were generally larger than those of flat emotion. Though, the only substantial difference occurred when comparing the effects of these emotions on self-rated positive communication behavior.

Table 12
*Results of APIMs Including Flat and Hard Emotion as Predictors
of Outcome Variables at Time 2: Standardized Coefficients*

Time 2 Outcome	Flat Emotion Predictor Paths		Hard Emotion Predictor Paths		Time 1 Score on Outcome
	Actor Effect	Partner Effect	Actor Effect	Partner Effect	
Negative Communication					
Partner Report	.06	-.04	.28***	.13	.30**
Positive Communication					
Self Report	FE = 0				FE = .48***
	MA = -.08*	-.02	-.21**	-.07	MA = -.02
Partner Report	-0.04	0	-.22**	-.04	.42***

Note. FE = Female, MA = Male; * $p < .05$, ** $p < .01$, *** $p < .001$

Examining the Effectiveness of the Experimental Manipulation

In order to test this study's second set of hypotheses, derived from Baumeister et al.'s (2007) theory of emotion as a feedback system, analysis of variance (ANOVA) was used to test for

differences between groups on emotion outcome variables at Time 2 (post-treatment). Separate one-way ANOVAs, using condition as the grouping factor, were conducted for each emotion outcome (hard, soft, and flat emotion). ANOVA results, effect sizes, and descriptive statistics are reported in Table 13. The only significant analysis occurred when comparing men’s hard emotion across the three conditions, $F(2, 64) = 4.21, p = .02, \eta^2 = .12$. Post hoc paired comparisons were made using Tukey's HSD test with p set at .05. Comparisons indicated that the men in the hard emotion condition ($M = 3.69, SD = 1.51$) reported significantly more hard emotion than men in the soft emotion condition ($M = 2.58, SD = 1.41$). There was no significant difference in reported hard emotion between men in the hard emotion versus control condition ($M = 2.85, SD = 2.85$). These results suggest that the manipulation was generally ineffective in producing the expected increases in hard and soft emotion. In spite of these results, further analyses were run in order to test the effects of the manipulation on outcome variables and determine whether APIM results, reported above, remain after controlling for the manipulation.

Table 13
Comparing Emotion Outcomes Across Conditions: Descriptive Statistics and Analysis of Variance (ANOVA) Results

	Emotion	Mean (Standard Deviation)			ANOVA Results	
		Hard Emotion Condition	Soft Emotion Condition	Control Condition	F value	Effect Size (Eta-Squared)
Men	Hard	3.69 _a (1.51)	2.58 _b (1.41)	2.85 (1.19)	4.21*	.12
	Soft	3.75 (1.44)	2.93 (1.28)	2.96 (1.31)	2.84	.08
	Flat	2.17 (1.07)	2.04 (1.13)	1.99 (.84)	.18	.01
Women	Hard	3.46 (1.4)	3.16 (1.34)	2.5 (1.22)	2.65	.08
	Soft	3.73 (1.18)	3.55 (1.36)	3.1 (1.23)	1.27	.04
	Flat	1.56 (.58)	1.71 (.86)	1.41 (.61)	.92	.03

Note: Different subscripts denote significantly different ($p < .05$) means by Tukey HSD post-hoc test; * $p < .05$

Testing for Effects of the Experimental Manipulation on Outcome Variables

In order to determine whether the emotion manipulation predicted changes in outcome variables and whether main APIM results remained significant after controlling for the emotion manipulation, two types of orthogonal contrasts were added as predictors in SEM models of partner attributions, appraisal of issue importance, and negative and positive communication. Given that the only significant manipulation effect pertained to hard emotion, in each model, the first orthogonal contrast, labeled Contrast I, compared the hard emotion condition to the soft emotion and control condition (hard emotion = 1, soft emotion = -.5, and control condition = -.5). In each model, Contrast II compared the soft emotion condition to the control condition (hard emotion = 0, soft emotion = 1, and control condition = -1).

Did the Emotion Manipulation Predict Change in Outcome Variables?

To check for any effects of the emotion manipulation on outcome variables, this analysis tested a set of models which including Contrasts I and II as predictors but excluded emotion predictors. A conceptual path diagram for these models is depicted in Figure 2. Standardized regression coefficients for paths between contrasts and outcome variables are reported in Table 14.

Results indicated that the emotion manipulation had no effect on attributions or communication behavior. The only outcome variable affected by the manipulation of emotion was the appraisal of issue importance. Contrast I positively predicted both men and women's appraisal of the issue's importance. This indicates that participants in the hard emotion condition reported a higher mean appraisal of the issue importance (Men: $M = 4.76$, $SD = 1.16$; Women: $M = 4.80$, $SD = 1.15$) than participants in the soft emotion

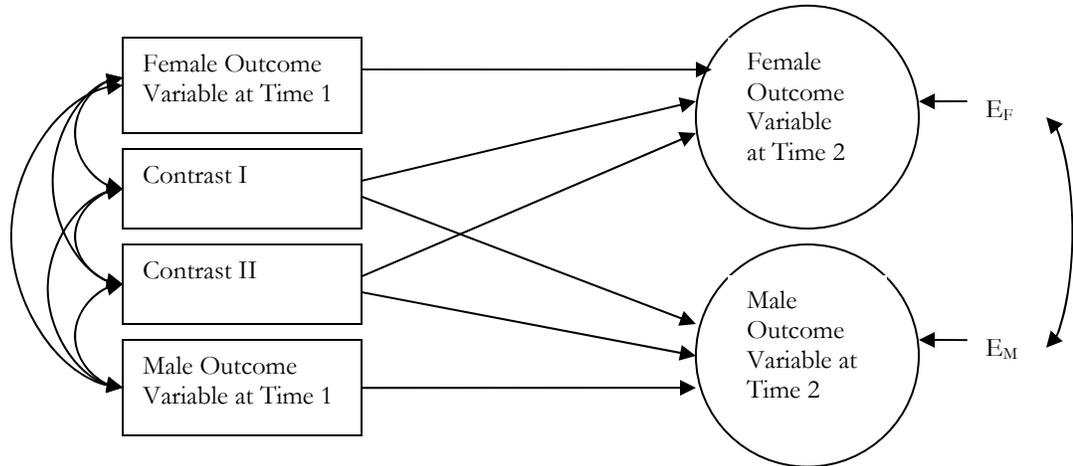


Figure 2. Conceptual Path Diagram for Models Including Contrasts I & II, Excluding Emotion Predictors. E_F = unexplained variance in male outcome, E_M = unexplained variance in female outcome; curved arrows represent correlations, straight arrows represent paths from predictor to outcome variable.

condition (Men: $M = 4.12$, $SD = 1.36$; Women: $M = 5.0$, $SD = .86$) and control condition (Men: $M = 4.12$, $SD = .99$; Women: $M = 3.82$, $SD = 1.38$). Contrast II positively predicted women’s but not men’s appraisal of the issue’s importance. This indicates that women in the soft emotion condition reported higher mean appraisal of issue importance ($M = 5.0$, $SD = .86$) than women in the control condition ($M = 3.82$, $SD = 1.38$). These results are ambiguous given that only men in the hard emotion condition reported the expected increase in emotion at post-treatment assessment.

Do Main APIM Results Remain Significant after Controlling for the Emotion Manipulation?

In order to determine whether the APIM results, reported above, remained after controlling for the emotion manipulation, the two contrasts described above were added to each APIM model. A conceptual path diagram for APIM models including Contrasts I and II is depicted in Figure 3. Standardized regression coefficients for all APIM pathways are reported in Tables 15-17.

Table 14
*Contrasts I and II Predicting Outcome Variables:
Standardized Coefficients*

Time 2 Outcome	Contrast I		Contrasts II	
	Female Outcome	Male Outcome	Female Outcome	Male Outcome
Negative Attributions	0.13	0.04	0.19	-0.14
Issue Importance	0.26*	0.40*	0.40*	0
Negative Communication				
Self Report	0.15	0.04	0.02	-0.03
Partner Report	0.02	-0.1	0.11	-0.05
Positive Communication				
Self Report	-0.03	-0.17	0.04	-0.08
Partner Report	-0.02	0.06	-0.1	0.1

Note. F = Female, M = Male; * $p < .05$

Results indicated that all main APIM results, reported in Tables 6-8, remained significant after controlling for the emotion manipulation. In the APIMs of hard emotion and flat emotion predicting appraisal of issue importance Contrast I positively predicted both male and female appraisal of issue importance and Contrast II positively predicted women's appraisal of issue importance. This indicates that the effects of Contrast I and II on the appraisal of issue importance reported in Table 14 remained after controlling for hard and flat emotion. In the APIM of soft emotion predicting issue importance Contrast I positively predicted men's, but not women's, appraisal of issue importance and Contrast II positively predicted female appraisal of issue importance. This indicates that, after controlling for soft emotion, the mean appraisal of issue importance reported by women in the hard emotion condition no longer differs significantly from that of women in the soft emotion- and control- conditions while the differences between men on this appraisal across the three conditions remains.

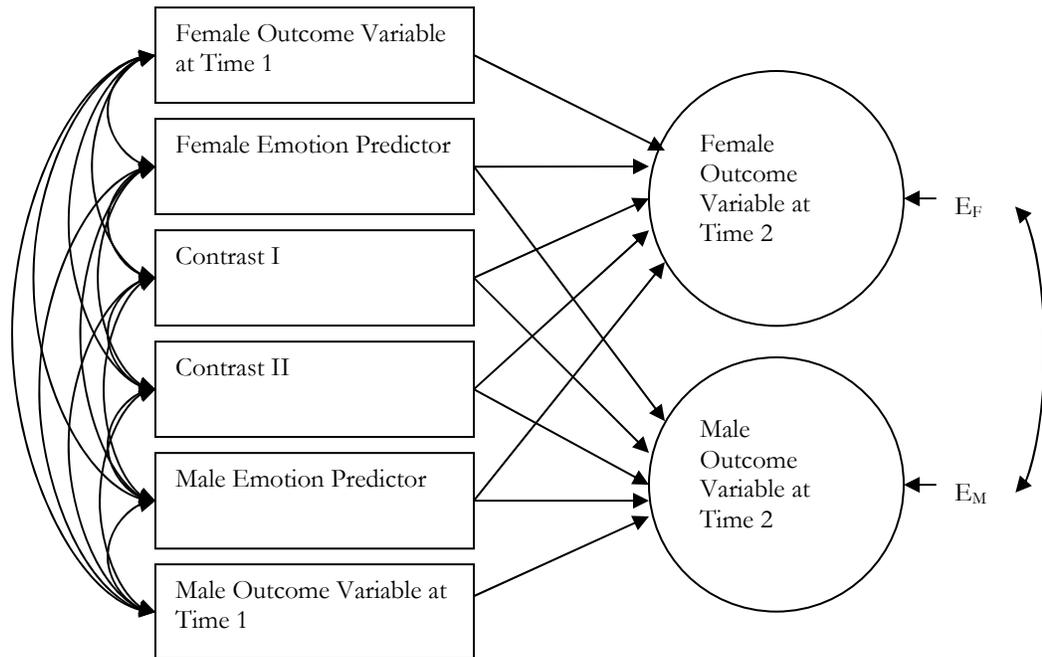


Figure 3. Conceptual Path Diagram for APIM models Including Emotion Predictors and Contrasts I & II. E_F = unexplained variance in male outcome, E_M = unexplained variance in female outcome; curved arrows represent correlations, straight arrows represent paths from predictor to outcome variable.

Results indicated that, in this same model, Contrast II positively predicted women's but not men's appraisal of issue importance. That is, after controlling for soft emotion, the mean appraisal of issue importance reported by men in the soft emotion condition no longer differs significantly from that of men in the control condition while the mean appraisal of issue importance reported by women in the soft emotion condition remains significantly larger than that of women in the control condition. As previously noted, these results are ambiguous given that, as indicated by ANOVA results, only men in the hard emotion condition reported the expected increase in emotion at post-treatment assessment. Two additional unexpected results were found when testing APIM models including hard emotion, Contrast I, and Contrast II as predictors of communication behavior.

Table 15
*APIM Results for Hard Emotion Predicting Outcome Variables while Controlling for the Emotion Manipulation
 using Contrasts I and II: Standardized Coefficients*

Time 2 Outcome	Contrast I		Contrasts II		Actor Effect	Partner Effect	Time 1 Outcome Score on Outcome
	Female Outcome	Male Outcome	Female Outcome	Male Outcome			
Negative Attributions Issue Importance	0.07	-0.12	0.09	-0.03	.60***	-0.26***	FE = .35*** MA = .04
Negative Communication							
Self Report	0.00	-0.12	-0.09	-0.01	0.43***	0	0.47***
Partner Report	-0.17	-0.31**	0.04	-0.07	.39***	.17*	.35***
Positive Communication							
Self Report	0.10	-0.05	0.10	-0.08	-0.26**	-0.09	FE = .46*** MA = 0
Partner Report	0.11	.22*	-0.04	0.11	-0.28**	-0.1	0.44***

Note. FE = Female, MA = Male; * $p < .05$, ** $p < .01$, *** $p < .001$

Table 16
*APIM Results for Soft Emotion Predicting Outcome Variables while Controlling for the Emotion Manipulation
 using Contrasts I and II: Standardized Coefficients*

Time 2 Outcome	Contrast I		Contrasts II		Actor Effect	Partner Effect	Time 1 Outcome Score on Outcome
	Female Outcome	Male Outcome	Female Outcome	Male Outcome			
Negative Attributions	0.16	-0.05	0.15	-0.10	.37***	-.27**	.32***
Issue Importance	0.20	.26*	.36**	-0.01	.31***	.02	.35**
Negative Communication							
Self Report	0.17	0.00	-0.02	0.00	0.21**	-0.17*	0.53***
Partner Report	-0.01	-0.19	0.08	-0.06	0.21*	-0.04	0.43***
Positive Communication							
Self Report	0.00	-0.12	0.07	-0.08	-0.15*	0	0.49***
Partner Report	-0.01	0.12	-0.08	0.09	-0.14	0.07	0.50***

Note. F = Female, M = Male; * $p < .05$, ** $p < .01$, *** $p < .001$

Table 17

*APIM Results for Flat Emotion Predicting Outcome Variables while Controlling for the Emotion Manipulation
using Contrasts I and II: Standardized Coefficients*

Time 2 Outcome	Contrast I		Contrasts II		Actor Effect	Partner Effect	Time 1 Outcome Score on Outcome
	Female Outcome	Male Outcome	Female Outcome	Male Outcome			
Negative Attributions	0.13	0.03	0.19	-0.15	0.01	0.01	0.31**
Issue Importance	.28**	.42**	.46***	0.00	-0.07**	0.01	0.33**
Negative Communication							FE = .51***
Self Report	0.14	0.03	0.03	-0.04	-0.01	0.03	MA = .57***
Partner Report	0.00	-0.10	-0.03	0.06	0.07**	-0.03	0.32***
Positive Communication							FE = 0
Self Report	-0.02	-0.16	0.06	-0.07	MA = -.09*	-0.02	FE = .60*** MA = -.08
Partner Report	0.00	0.07	-0.07	0.10	-0.04*	-0.01	0.43***

Note. FE = Female, MA = Male; * $p < .05$, ** $p < .01$, *** $p < .001$

In the APIM of hard emotion predicting partner-rated negative communication Contrast I negatively predicted men's report of women's negative communication ($\beta = -.31, p < .05$).

In the APIM of hard emotion predicting partner-rated positive communication, Contrast I positively predicted men's report of women's positive communication behavior ($\beta = .22, p < .05$). This indicates that, although hard emotion predicted an increase in the negative communication behavior and a decrease in the positive communication behavior of both men and women, observed by both actor and partner, after controlling for the effects of Contrast I, men in the hard emotion condition reported (and presumably observed) less negative communication and more positive communication in their partners than did men in the soft emotion- or control-conditions.

CHAPTER FOUR

Discussion

The purpose of this study was to contribute to the couples therapy literature by investigating the function of three types of negative emotion in romantic relationship conflict. As a primary objective, this study intended to replicate prior research findings regarding associations between negative emotion, attributions, appraisals, and communication behavior during relationship conflict and to generalize these findings to dating couples engaged in conflict conversations within a laboratory setting. An important component of this investigation was the distinction between hard, soft, and flat emotion, types of negative emotion that, based on theory and prior research, should associate differentially with conflict-related variables (Sanford, 2007a). This study's secondary objective was to experimentally induce hard and soft emotion to determine whether emotion can be manipulated to effect change in cognition and communication behavior and whether changes in behavior are mediated by attribution formation, as predicted by Baumeister et al.'s (2007) theory of emotion as a feedback system. The manipulation of emotion employed in this study was generally ineffective in producing the expected emotional outcomes, and thus this study was unable to test hypotheses regarding causal effects of emotion on cognition and behavior. However, results of this study offer important information toward clarifying the roles of hard, soft, and flat emotion during relationship conflict. As expected, results indicate that negative emotions predict change in cognition and behavior in this

context and that each type of negative emotion is associated with distinct cognitions and behaviors.

Key Findings

As hypothesized, during conflict conversations, hard emotion predicted increases in negative partner attributions, increases in negative communication, and decreases in positive communication. An important feature of this investigation was the use of both self and partner reports of behavior. As expected, the changes in communication behavior were substantial, as they were reported, and ostensibly observed, by both the person engaging in the behavior (i.e. self) and that person's partner. Soft emotion also initially predicted increases in negative attributions, increases in negative communication, and decreases in positive communication. However, after controlling for hard emotion, these associations became nonsignificant. Associations between soft emotion and the appraisal of issue importance also supported hypotheses. As expected, soft emotion predicted increases in the appraisal that an issue is important to resolve. An unexpected finding, discussed more thoroughly below, was hard emotion's prediction of *increases* in this appraisal. However, after controlling for soft emotion, the effects of hard emotion on the appraisal of issue importance, indicated by the initial APIM analyses, became nonsignificant.

Results of this study generally coincide with prior research (e.g. Sanford, 2007b) and support the distinction between hard and soft emotion proposed by IBCT (Dimidjian et al., 2002; Jacobson & Christenson, 1996). That is, during relationship conflict, hard emotion appears to function as a selfish emotion that is associated with two detrimental outcomes: 1) negative interpretations of a partner's intentions and behavior, and 2) antagonistic or defensive behavior toward one's partner. Soft emotion, on the other hand, appears to function as a more pro-social emotion that is not significantly associated with negative

attributions and underscores the importance of resolving relationship issues. It is likely that becoming aware of an issue's importance motivates partners to devote resources toward resolving a particular conflict. This assertion coincides with Sanford's (2007b) finding that soft emotion predicts conflict resolution.

By replicating, in a sample of dating undergraduate couples, certain associations between negative emotions and conflict-related variables that have been reported in the context of marital conflict this study supports the generalizability of prior research. Results of this study also support the theoretical underpinnings of EFCT and IBCCT by promoting the conceptualization of emotion as a key variable during couple conflict. However, the most important contribution of this study was the examination of flat emotion within the context of relationship conflict. The construct of flat emotion is relatively new to the field of couple's research, and only one prior investigation has studied flat emotion as a predictor of cognitive and behavioral variables during couple conflict (Sanford, 2007a). Thus, the current study provided useful information regarding the role of flat emotion in this context. For example, men and women's flat emotion was negatively correlated with relationship satisfaction and positively correlated with relationship avoidance. Women's flat emotion was positively correlated with relationship anxiety. A more valuable finding, however, was that flat emotion predicted within-person change in communication behavior during conflict conversations. As hypothesized, flat emotion predicted decreases in positive communication. Even after controlling for hard emotion, flat emotion remained a significant predictor of decreases in men's self-reported positive communication. Taken together, these results provide additional evidence for the detrimental role of flat emotion during romantic relationship conflict and provide a useful groundwork for future research on the effects of distinct negative emotions on cognition and behavior in this context.

Results of this study also underscore the importance of incorporating the construct of flat emotion in the development of new couples' therapy interventions. For example, when flat emotion is observed in men it may be beneficial to monitor and promote the use of positive communication.

Another contribution of this study is the use of the APIM to measure both the actor and partner effects of negative emotion on conflict-related variables. As Cook and Snyder (2005) note, measuring actor effects permits assessing the degree to which individual traits versus interpersonal dispositions determine outcomes and thus can provide direction for future intervention. For example, if the effect of an actor's emotion on his or her *own* behavior is relatively large compared to the effect on his or her *partner's* behavior, then future interventions should focus more on the individual rather than on interpersonal dynamics. If the effect of an actor on his or her partner is larger, interventions should focus more intensely on interpersonal dynamics. Given that results of this study evidenced both actor and partner effects of negative emotion on negative attributions, therapeutic interventions aimed at modifying negative attributions in romantic relationships may benefit from focusing on both the individual and couple. This may be accomplished, for example, by recommending individual therapy, in conjunction with couples' therapy, to a partner who struggles with strong negative partner attributions. Given that only actor effects were observed when testing emotion as a predictor of communication, therapeutic interventions aimed at modifying communication behavior may benefit from focusing more intensely on individual factors rather than on the interpersonal dynamics of the relationship.

Unexpected Results

Some of the regression effects of emotion predictors on outcome variables were unexpected. This study, for example, did not anticipate that hard emotion would significantly predict increases in the appraisal of issue importance. Although, after controlling for soft emotion, this effect became nonsignificant and a chi square difference test confirmed that the effect of soft emotion on this variable was larger than that of hard emotion, the difference between the effects of hard and soft emotion on the appraisal of issue importance was not substantial enough to affect the overall fit of the model. Furthermore, a test of the effects of the emotion manipulation on outcome variables revealed that participants in the hard emotion condition reported a higher mean appraisal of the issue importance than participants in the soft emotion and control conditions. However, given that participants in this condition did not differ from participants in the control condition, these results are ambiguous. That is, it is unlikely that these results are due to increased hard emotion. Nevertheless, the finding that hard emotion initially predicted increases in this appraisal runs contrary to prior research (Sanford, 2007b) and to the theoretically underpinnings of this investigation. Hard emotion, defined as a selfish negative emotion (Christenson et al., 1995), should be inversely related to pro-social outcomes, such as identifying an issue as important to resolve. It is possible, however, that the hard emotion experienced by men and women in this study, nearly all of whom were involved in dating rather than marital relationships, was not as potent as that experienced by the married couples in Sanford's (2007b) study, and thus did not promote the same level of selfish intent.

That the predictive effect of flat emotion on the appraisal of issue importance became nonsignificant after controlling for soft emotion was also unexpected. Based on the previously reported associations between flat emotion and withdrawal during relationship

conflict (Sanford, 2007b), this study hypothesized that flat emotion would significantly predict decreases in this appraisal. It is possible, however, that flat emotion is more prevalent in distressed couples and that this study's sample, relatively non-distressed dating couples, did not experience a high enough level of flat emotion to produce the expected association between flat emotion and the appraisal of issue importance. It may be, however, that flat emotion, rather than promote overt changes in the appraisal of an issue's importance simply functions to decrease the amount of attention devoted to the conversation. Thus, it is possible that flat emotion may actually be related to a suppression, or general avoidance, of conflict-related cognition rather than to changes in any particular type of cognitive variable.

The examination of associations between negative emotion and communication variables also yielded unanticipated results. It was expected that soft emotion would predict the same pattern of change in communication as hard emotion, but that the regression effects of hard emotion would be significantly larger than those of soft emotion. This hypothesis was substantiated when, after controlling for hard emotion, the actor effects of soft emotion on all communication variables became nonsignificant. However, the fit of models that constrained the actor effects of hard and soft emotion on communication variables to be equal was comparable to unconstrained models. As discussed above, it is possible that the intensity of negative emotion experienced by couples in this study differed from that experienced by the married couples in Sanford's (2007b) studies. A less potent experience of hard emotion, for example, may have limited the unique predictive utility of this variable after controlling for the shared variance with general negative affect. Additionally, the developmental stage of participants in this study may have contributed to these unexpected results. The average age of participants in this study was 20 years and

nearly all participants were college freshman or sophomores. It is possible that the couples in this investigation were simply functioning at a different stage of emotional intelligence (Zeidner, Matthews, Roberts, & MacCann, 2003) than couples in Sanford's (2007b) studies. A lack of emotional self awareness, for example, may have inhibited the accurate report of an affective experience.

Yet another unexpected result included the partner effects of both hard and soft emotion on negative partner attributions. These results suggest that the hard and soft emotion of actors predicts decreases in the negative attributions of partners. It is possible that this association relates to a particular quality of the issue at hand. For example, it makes sense that a person would report increased anger and sadness over an issue that his or her partner is truly responsible for and that the partner would be less likely to report negative attributions when accepting responsibility for the issue. This conjecture, of course, assumes that men and women accurately interpret and agree upon the nature of the problem. While this may not always be the case, the association between actor emotion and partner attribution formation described here merits further consideration, as it may inform future interventions that specifically target interpersonal dynamics.

Another unanticipated result involved the effects of men's baseline (Time 1) assessment scores on outcome variables. While women's baseline scores consistently predicted change in outcome variables, assessed at Time 2, the effect of men's baseline scores on outcome variables was inconsistent. For example, across all models including self-reported positive communication as an outcome variable, men's baseline self-reported positive communication consistently failed to predict their positive communication at Time 2. It is possible that men positive communication behavior fluctuated more widely across the two assessments than that of women. If it did, however, their partner's do not appear to

have noticed this fluctuation, as women's baseline ratings of men's positive communication positively predicted their ratings at Time 2. Another possibility is that participation in this study may have prompted men to approach questions about their own positive communication behavior differently, perhaps more attentively, at Time 2. Hence, the consistent difference between men and women in terms of the stability of self-rated positive communication raises the possibility of differential responses to participation in this type of research.

A secondary aim of this study was to determine whether emotion can be manipulated in a laboratory setting to effect change in cognition and behavior. Results indicated that the emotion induction task used in this study was generally ineffective in producing the intended increases in hard and soft emotion. Since a causal relationship between emotion and communication behavior was not established, this investigation was unable to evaluate the subsequent hypotheses derived from Baumeister et al.'s (2007) theory of emotion as a feedback system. However, this study did test for any potential effects of the manipulation on APIM results. In testing for these, this investigation came across two unexpected results. These results indicated that, although hard emotion predicted an increase in negative communication and a decrease in positive communication, after controlling for the effects of the emotion manipulation, men in the hard emotion condition reported less negative communication and more positive communication in their partners than did men in the soft emotion- or control-conditions. Given that only men in the hard emotion condition reported an increase in hard emotion from pre- to post-treatment, it is possible that the women in the hard emotion condition modified their behavior in response to their partner's hard emotion. This is especially likely given that the couples in this study were relatively nondistressed and reported relatively low levels of hard emotion overall

compared to the hard emotion reported by married couples in prior research (e.g. Sanford, 2007a). That is, the men in hard emotion condition may have experienced a relatively benign level of hard emotion, which may have prompted responses aimed at conflict resolution in their partner's. The conjecture that different levels of negative emotion predict distinct behavioral responses merits further attention.

There are several probable reasons for the inefficacy of this study's emotion induction task. It is possible that, though participants were able to retrieve an emotional autobiographical memory, the retrieved memory did not induce the expected increase in emotion. Although prior studies have successfully used this task to induce specific emotions, participants in these studies wrote longhand about emotional memories whereas participants in this study typed their responses. There is some evidence to suggest that writing longhand when recounting emotional narratives produces greater negative affect than typing such narratives (Brewin & Lennard, 1999). The efficacy of the directed writing task may also have been hindered by its induction of incidental rather than integral emotion. According to Loewenstein & Lerner (2003) immediate emotions come in two variants, either as incidental emotions, caused by factors which are not related to the problem at hand, and as integral emotions, which are caused by the problem itself. Based on prior research (Desteno et al., 2004, Dunn & Schweitzer, 2005; Keltner et al., 1993; Lerner, Small, & Loewenstein, 2004) the incidental emotion induced by this task was expected to influence situations unrelated to the event eliciting them. However, no prior investigation has used this task in the realm of couples' research. It is possible that, due to the intimate nature of romantic relationships, participants were able to suppress the effects of incidental emotion while answering questions pertaining to an important issue in their relationship. This is especially likely given that couples in this study were highly satisfied with their relationships,

generally nondistressed, and tended to rate the issue at hand as important. The manipulation check used in this study may have posed another problem. As a manipulation check, this study asked participants to rate their emotion immediately after the emotion induction. However, the questionnaire asked for emotion ratings related to the issue to be discussed in the upcoming conversation. Again, it is possible that participants may have been able to suppress the effects of incidental emotion while answering questions pertaining to the problem at hand. Given that Baumeister et al.'s (2007) theory of emotion as a feedback system has received initial support in the realm of couples' research (Tashiro & Frazier, 2007), examining hypotheses derived from this theory using a more potent manipulation of emotion may prove a worthwhile endeavor for future research.

Limitations

A major limitation of this study is the use of a nonclinical convenience sample of mostly Caucasian college students. The voluntary nature of participation by the HPR-enrolled student's partner also creates the possibility of sampling bias. Clinical samples can be qualitatively different than nonclinical samples, and thus caution must be exerted when generalizing the results from methods used in the current studies to clinically distressed clients. Furthermore, like most of the previous research on emotion and social cognition, this study does not address multicultural questions or test how well these findings generalize to diverse populations. This study's small sample size is another potentially limiting factor. Though there is disagreement in the literature regarding adequate sample size in SEM analysis, sample sizes commonly run between 200 to 400 cases (Garson, 2009). Loehlin (1992) recommends at least 100 cases. Given that in dyadic data the couple is the unit of analysis a sample of 67 couples may have produced unstable parameter estimates and significance tests that lack power.

Conclusions

Despite limitations, the results of this study are valuable in that they replicate several prior findings regarding the role of negative emotion in relationship conflict and thus offer useful information toward the development of more effective and efficient therapeutic interventions designed to strengthen couple relationships. A unique contribution of this study is the examination of flat emotion as a predictor of cognition and behavior during relationship conflict. This study also contributes novel findings regarding associations among flat emotion, the appraisal of issue importance, and communication behavior. Taken together, results suggest that during relationship conflict the detrimental impact of flat emotion on relationship outcomes is substantial and distinct from that of hard and soft emotion.

APPENDICES

APPENDIX A

Research Instruments

Background Information

Demographic Information

1. What is your sex?
 - Male
 - Female

2. How long have you been in a couple relationship with your partner?
_____year(s)_____month(s)

3. What is your age? _____

4. What is your race/ethnicity? (please check the one option that best describes you)
 - Black or African-American
 - Asian or Asian American
 - Hawaiian or other Pacific Islander
 - Hispanic or Latino
 - Native American
 - White, non-Hispanic

5. What is your religious affiliation?
 - Buddhist
 - Evangelical Christian
 - Hindu
 - Jewish
 - Muslim
 - Protestant Christian
 - Roman Catholic
 - Other:_____

6. What is your academic classification?
 - Freshman
 - Sophomore
 - Junior
 - Senior

Relationship Satisfaction Measure

Please indicate the extent to which each statement describes your relationship with your partner.

	<i>Disagree Strongly</i>	<i>Disagree</i>	<i>Disagree Somewhat</i>	<i>Agree Somewhat</i>	<i>Agree</i>	<i>Agree Strongly</i>
We have a good relationship.	1	2	3	4	5	6
My relationship with my partner is very stable.	1	2	3	4	5	6
Our relationship is very strong.	1	2	3	4	5	6
My relationship with my partner makes me very happy.	1	2	3	4	5	6
I really feel like part of a team with my partner.	1	2	3	4	5	6
	<i>Very Unhappy</i>					<i>Perfectly Happy</i>
[The degree of happiness, everything considered, in your relationship]	1	2	3	4	5	6

Relationship Avoidance and Anxiety Measure

Please indicate the extent to which each statement describes your relationship with your partner.

	<i>Disagree Strongly</i>	<i>Disagree</i>	<i>Disagree Somewhat</i>	<i>Agree Somewhat</i>	<i>Agree</i>	<i>Agree Strongly</i>
I'm afraid that I will lose my partner's love.	1	2	3	4	5	6
I prefer not to show my partner how I feel deep down.	1	2	3	4	5	6
I worry that my partner doesn't love me.	1	2	3	4	5	6
I feel comfortable sharing my private thoughts and feelings with my partner.	1	2	3	4	5	6
I often wish that my partner's feelings for me were as strong as my feelings for him or her.	1	2	3	4	5	6
I find it difficult to allow myself to depend on my partner.	1	2	3	4	5	6
I worry a lot about my relationship.	1	2	3	4	5	6
I am very comfortable being close to my partner.	1	2	3	4	5	6
I rarely worry about my partner leaving me.	1	2	3	4	5	6
I don't feel comfortable opening up to my partner.	1	2	3	4	5	6
I do not often worry about being abandoned.	1	2	3	4	5	6
I find it relatively easy to get close to my partner.	1	2	3	4	5	6
I find that my partner doesn't want to get as close as I would like.	1	2	3	4	5	6
It helps to turn to my partner in times of need.	1	2	3	4	5	6
My desire to be very close sometimes scares people away.	1	2	3	4	5	6
I feel comfortable depending on my partner.	1	2	3	4	5	6

Pre-Conversation Questionnaire

Couples Emotion Rating Form

Take a moment to consider how you feel about the issue described for Memory [insert A or B]. Consider how much you feel EACH of the feelings listed below. Rate the extent to which you agree with each statement.

	<i>Disagree Strongly</i>	<i>Disagree</i>	<i>Disagree Somewhat</i>	<i>Agree Somewhat</i>	<i>Agree</i>	<i>Agree Strongly</i>
I feel angry.	1	2	3	4	5	6
I feel sad.	1	2	3	4	5	6
I feel bored.	1	2	3	4	5	6
I feel annoyed.	1	2	3	4	5	6
I feel hurt.	1	2	3	4	5	6
I feel uninterested.	1	2	3	4	5	6
I feel irritated.	1	2	3	4	5	6
I feel concerned.	1	2	3	4	5	6
I feel indifferent.	1	2	3	4	5	6
I feel aggravated.	1	2	3	4	5	6
I feel disappointed.	1	2	3	4	5	6
I feel disengaged.	1	2	3	4	5	6

Attributions Measure

Think about what your partner did during the specific incident described for Memory [insert A or B]. Indicate how much you agree with each of the following statements.

	<i>Disagree Strongly</i>	<i>Disagree</i>	<i>Disagree Somewhat</i>	<i>Agree Somewhat</i>	<i>Agree</i>	<i>Agree Strongly</i>
My partner deserves to be blamed.	1	2	3	4	5	6
My partner has logical reasons for his or her behavior.	1	2	3	4	5	6
My partner has good intentions.	1	2	3	4	5	6
My partner is motivated by selfish concerns.	1	2	3	4	5	6
It makes sense that my partner feels the way he or she does.	1	2	3	4	5	6
My partner did something on purpose that caused this conflict.	1	2	3	4	5	6
My partner is at fault.	1	2	3	4	5	6
My partner's feelings are understandable.	1	2	3	4	5	6
My partner wants sensible things.	1	2	3	4	5	6
My partner could have prevented this conflict.	1	2	3	4	5	6
My partner is being reasonable.	1	2	3	4	5	6
My partner caused this conflict.	1	2	3	4	5	6
My partner's viewpoint is valid.	1	2	3	4	5	6
My partner knew it was wrong to do something, but did it anyway.	1	2	3	4	5	6

Appraisal of Issue Importance

Think about the incident described in Memory [insert A or B].
Indicate how much you agree with the following statement.

	<i>Disagree Strongly</i>	<i>Disagree</i>	<i>Disagree Somewhat</i>	<i>Agree Somewhat</i>	<i>Agree</i>	<i>Agree Strongly</i>
The topic of the upcoming conversation is extremely important.	1	2	3	4	5	6

Post-Conversation Questionnaire

Communication Measure

Listed below are things that couples sometimes do during conversations. How much did your partner do these things during the conversation you just completed?

Rate the extent to which you agree with each statement.

	<i>Disagree Strongly</i>	<i>Disagree</i>	<i>Agree Somewhat</i>	<i>Agree</i>	<i>Agree Strongly</i>
My partner said something mean.	0	1	2	3	4
My partner made me feel that my viewpoint was valuable.	0	1	2	3	4
My partner raised his/her voice.	0	1	2	3	4
My partner was considerate toward me.	0	1	2	3	4
My partner told me that I was doing something to cause the problem.	0	1	2	3	4
My partner said something kind.	0	1	2	3	4
My partner argued.	0	1	2	3	4
My partner agreed with me.	0	1	2	3	4
My partner defended his/her position.	0	1	2	3	4
My partner politely talked about his/her feelings.	0	1	2	3	4
My partner corrected my statements.	0	1	2	3	4
My partner carefully listened so he/she could understand me.	0	1	2	3	4
My partner criticized me.	0	1	2	3	4
My partner discussed the issue calmly.	0	1	2	3	4

Now consider how much YOU did these things during the conversation you just completed.

Rate the extent to which you agree with each statement.

	<i>Disagree Strongly</i>	<i>Disagree</i>	<i>Agree Somewhat</i>	<i>Agree</i>	<i>Agree Strongly</i>
I said something mean.	0	1	2	3	4
I made my partner feel that his/her viewpoint was valuable.	0	1	2	3	4
I raised my voice.	0	1	2	3	4
I was considerate toward my partner.	0	1	2	3	4
I told my partner that he/she was doing something to cause the problem.	0	1	2	3	4
I said something kind.	0	1	2	3	4
I argued.	0	1	2	3	4
I agreed with my partner.	0	1	2	3	4
I defended my position.	0	1	2	3	4
I politely talked about my feelings.	0	1	2	3	4
I corrected my partner's statements.	0	1	2	3	4
I carefully listened so I could understand my partner.	0	1	2	3	4
I criticized my partner.	0	1	2	3	4
I discussed the issue calmly.	0	1	2	3	4

General Memory Task A

Hard and Soft Emotion Conditions

Page 1:

“Briefly describe three things that make you most [angry or sad].”

Page 2:

“Describe in detail the one situation that has made you [angriest or saddest] you have been in your life, and describe it such that a person reading the description would become [angry or sad] just from hearing about the situation.”

Control Condition

“Describe the last classroom you were in so that, from reading your description, someone else can picture it perfectly.”

General Memory Task B

First page:

“Briefly describe three things that make you most happy.”

Next page:

“Describe in detail the one situation that has made you the happiest you have been in your life, and describe it such that a person reading the description would become happy just from hearing about the situation.”

APPENDIX B

Path Diagrams for all Actor Partner Interdependence Models

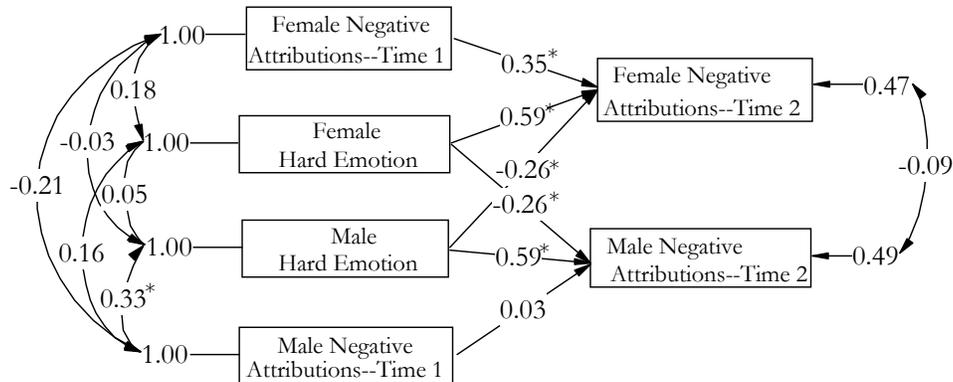


Figure B1. Path Diagram and Standardized Regression Coefficients for Hard Emotion Predicting Negative Attributions. Chi-Square = 7.43, df = 4, P-value = 0.11, RMSEA = 0.12; Curved arrows represent correlations; Straight arrows represent pathways between predictor and outcome variables; * p value < or = .05

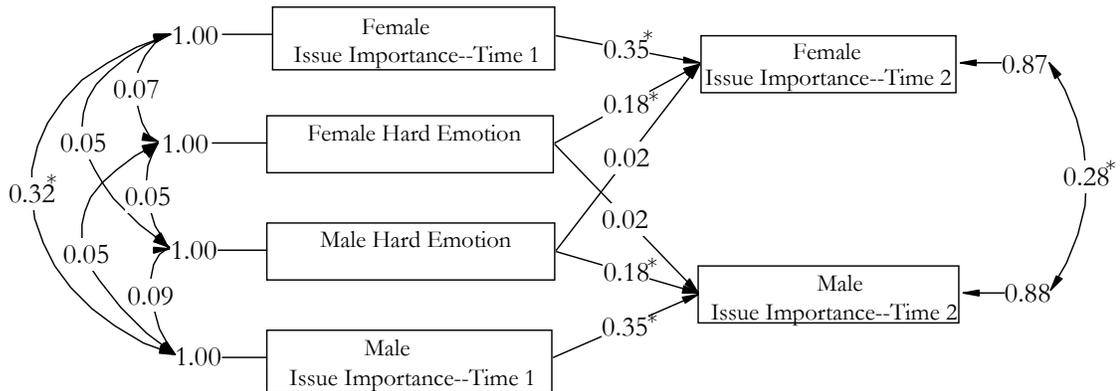


Figure B2. Path Diagram and Standardized Regression Coefficients for Hard Emotion Predicting Appraisal of Issue Importance. Chi-Square = .29, df = 5, P-value = 1, RMSEA = 0; Curved arrows represent correlations; Straight arrows represent pathways between predictor and outcome variables; * p value < or = .05

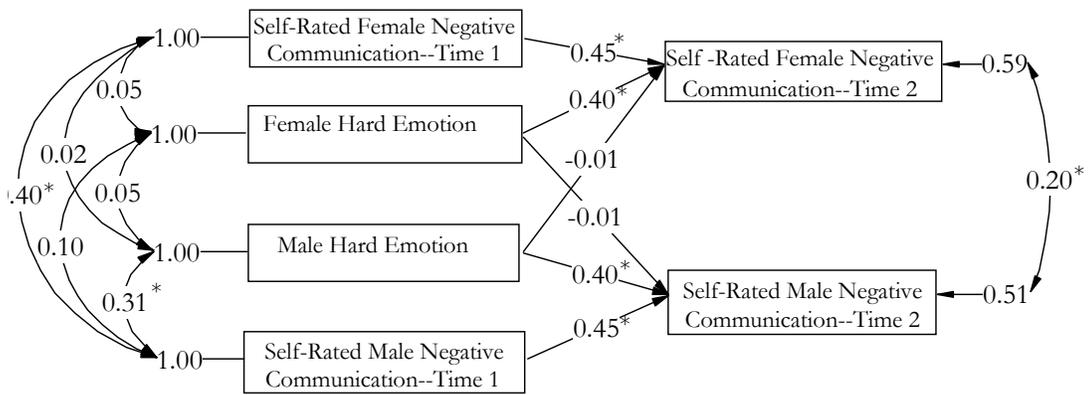


Figure B3. Path Diagram and Standardized Regression Coefficients for Hard Emotion Predicting Self-Rated Negative Communication. Chi-Square = 5.24, df = 5, P-value = .39, RMSEA = .03; Curved arrows represent correlations; Straight arrows represent pathways between predictor and outcome variables; * p value < or = .05

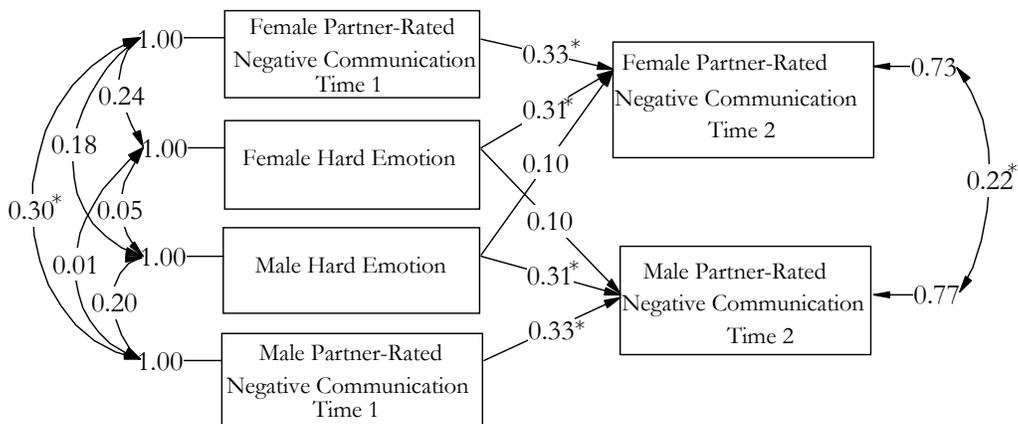


Figure B4. Path Diagram and Standardized Regression Coefficients for Hard Emotion Predicting Partner-Rated Negative Communication. Chi-Square = 1.06, df = 5, P-value = .96, RMSEA = 0; Curved arrows represent correlations; Straight arrows represent pathways between predictor and outcome variables; * p value < or = .05

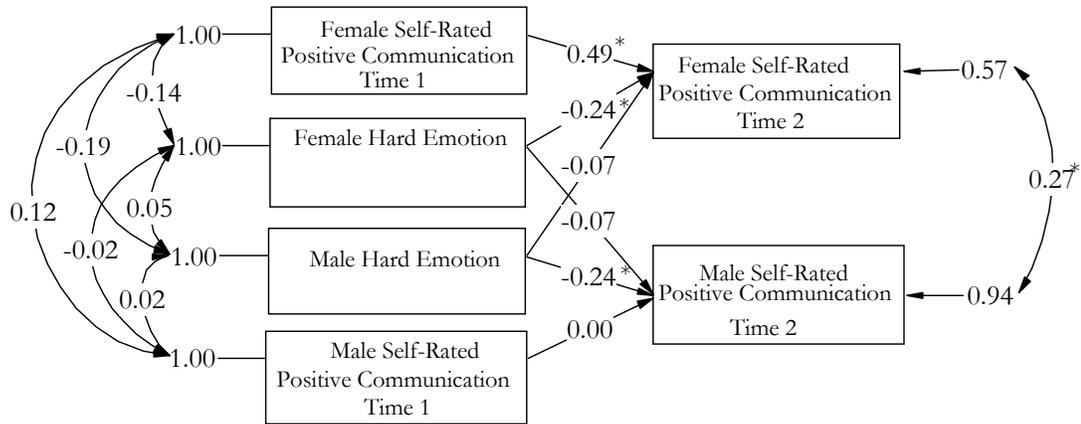


Figure B5. Path Diagram and Standardized Regression Coefficients for Hard Emotion Predicting Self-Rated Positive Communication. Chi-Square = 9.60, df = 5, P-value = .05, RMSEA = .15; Curved arrows represent correlations; Straight arrows represent pathways between predictor and outcome variables; * p value < or = .05

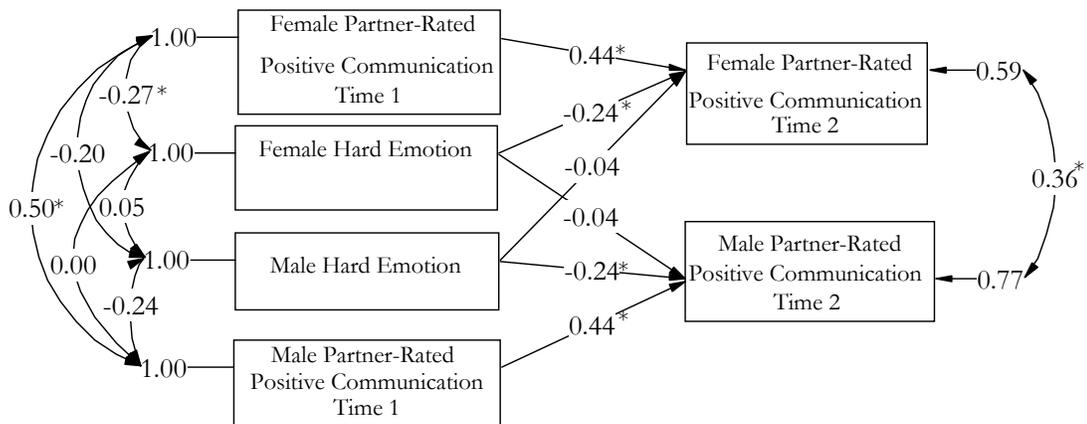


Figure B6. Path Diagram and Standardized Regression Coefficients for Hard Emotion Predicting Partner-Rated Positive Communication. Chi-Square = 4.40, df = 5, P-value = .49, RMSEA = 0; Curved arrows represent correlations; Straight arrows represent pathways between predictor and outcome variables; * p value < or = .05

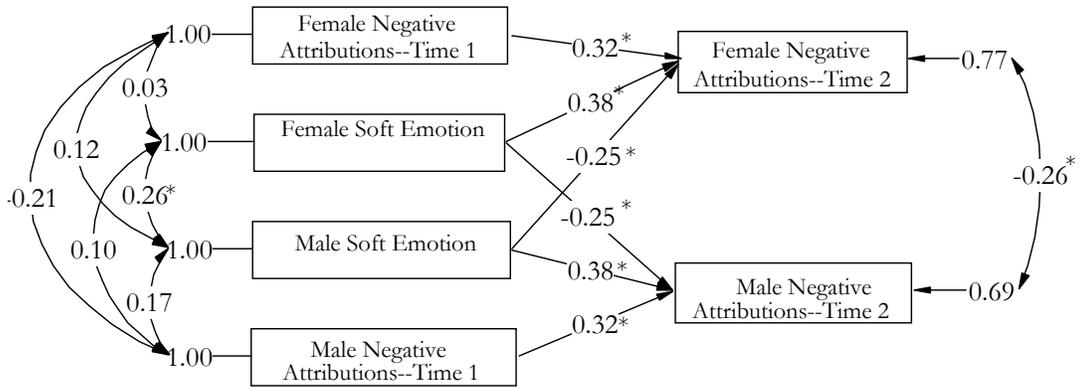


Figure B7. Path Diagram and Standardized Regression Coefficients for Soft Emotion Predicting Negative Attributions. Chi-Square = 11.99, df = 5, P-value = 0.03, RMSEA = 0.15; Curved arrows represent correlations; Straight arrows represent pathways between predictor and outcome variables; * p value < or = .05

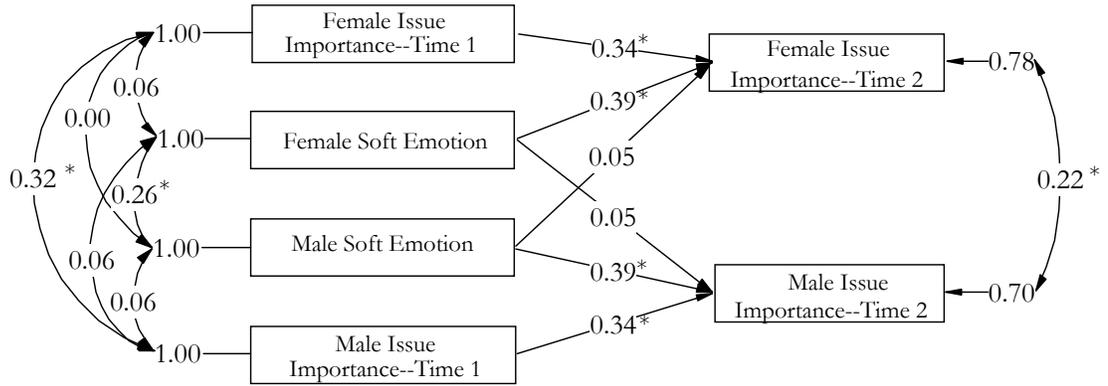


Figure B8. Path Diagram and Standardized Regression Coefficients for Soft Emotion Predicting Appraisal of Issue Importance. Chi-Square = 1.87, df = 5, P-value = 0.87, RMSEA = 0; Curved arrows represent correlations; Straight arrows represent pathways between predictor and outcome variables; * p value < or = .05

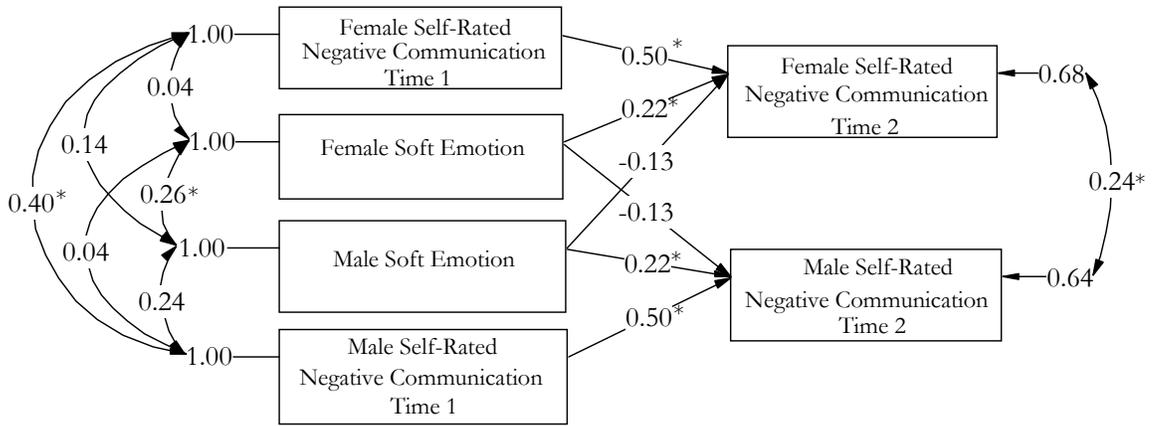


Figure B9. Path Diagram and Standardized Regression Coefficients for Soft Emotion Predicting Self-Rated Negative Communication. Chi-Square = 3.45, df = 5, P-value = 0.63, RMSEA = 0; Curved arrows represent correlations; Straight arrows represent pathways between predictor and outcome variables; * p value < or = .05

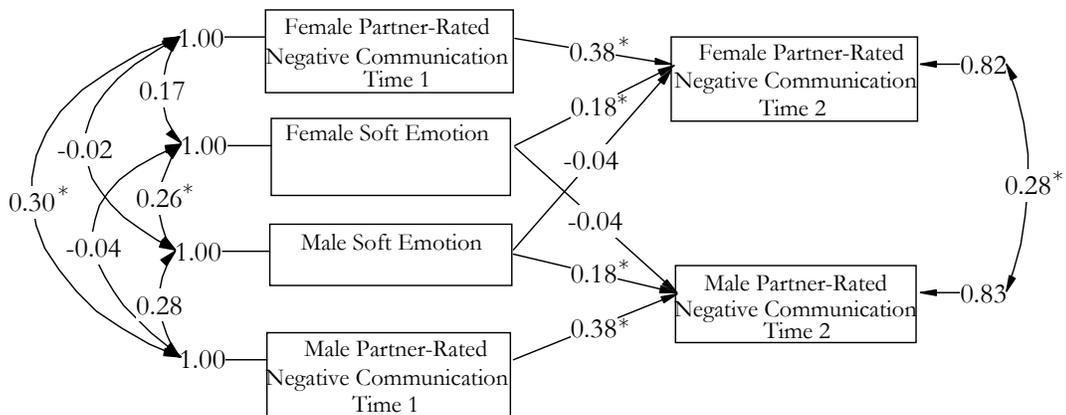


Figure B10. Path Diagram and Standardized Regression Coefficients for Soft Emotion Predicting Partner-Rated Negative Communication. Chi-Square = 1.93, df = 5, P-value = 0.86, RMSEA = 0; Curved arrows represent correlations; Straight arrows represent pathways between predictor and outcome variables; * p value < or = .05

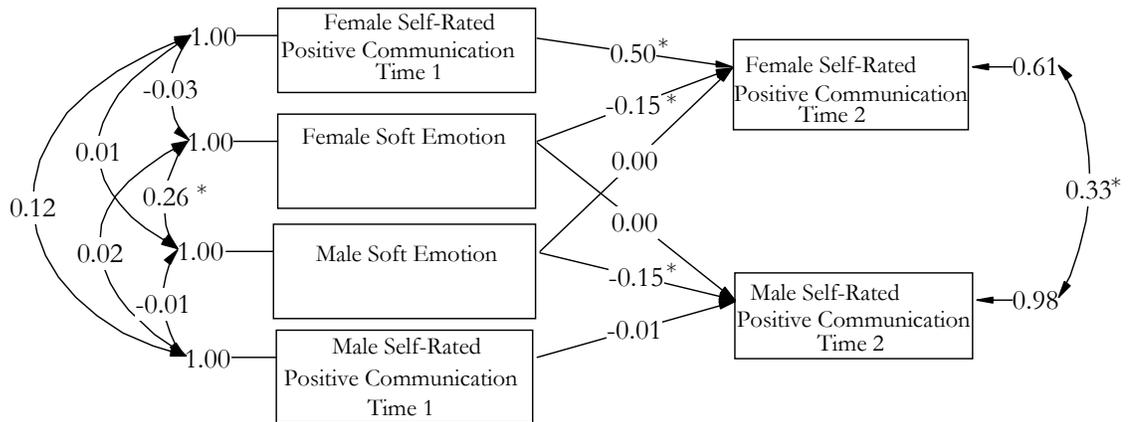


Figure B11. Path Diagram and Standardized Regression Coefficients for Soft Emotion Predicting Self-Rated Positive Communication. Chi-Square = 8.17, df = 4, P-value = 0.09, RMSEA = .13; Curved arrows represent correlations; Straight arrows represent pathways between predictor and outcome variables; * p value < or = .05

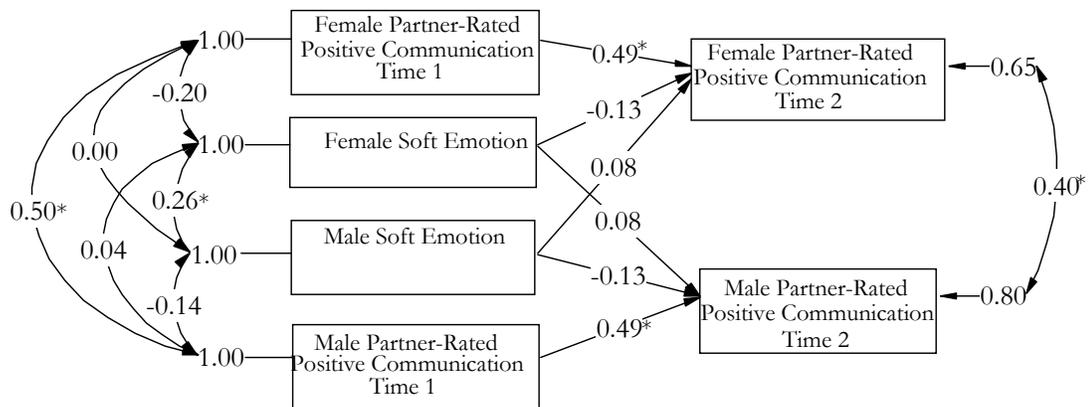


Figure B12. Path Diagram and Standardized Regression Coefficients for Soft Emotion Predicting Partner-Rated Positive Communication. Chi-Square = 6.13, df = 5, P-value = 0.29, RMSEA = .06; Curved arrows represent correlations; Straight arrows represent pathways between predictor and outcome variables; * p value < or = .05

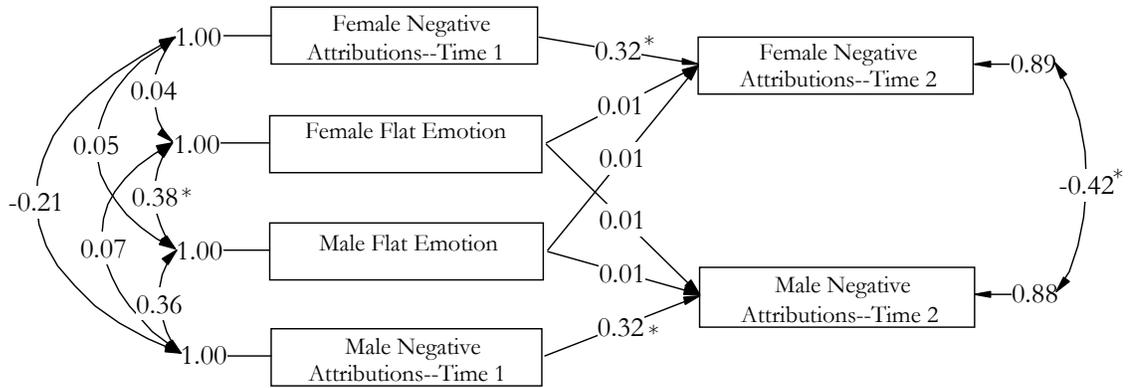


Figure B13. Path Diagram and Standardized Regression Coefficients for Flat Emotion Predicting Negative Partner Attributions. Chi-Square = 7.54, df = 5, P-value = 0.09, RMSEA = .89; Curved arrows represent correlations; Straight arrows represent pathways between predictor and outcome variables; * p value < or = .05

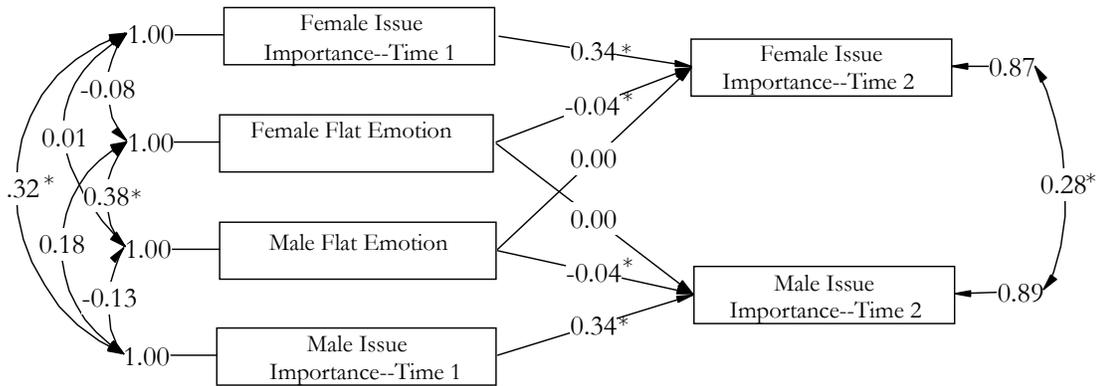


Figure B14. Path Diagram and Standardized Regression Coefficients for Flat Emotion Predicting Appraisal of Issue Importance. Chi-Square = 4.26, df = 5, P-value = 0.51, RMSEA = 0; Curved arrows represent correlations; Straight arrows represent pathways between predictor and outcome variables; * p value < or = .05

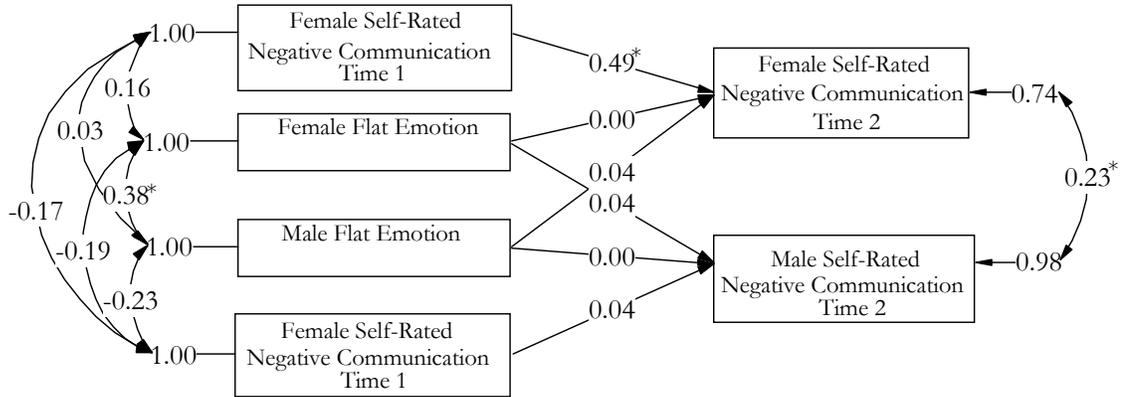


Figure B15. Path Diagram and Standardized Regression Coefficients for Flat Emotion Predicting Self-Rated Negative Communication. Chi-Square = 10.67, df = 4, P-value = 0.03, RMSEA = .16; Curved arrows represent correlations; Straight arrows represent pathways between predictor and outcome variables; * p value < or = .05

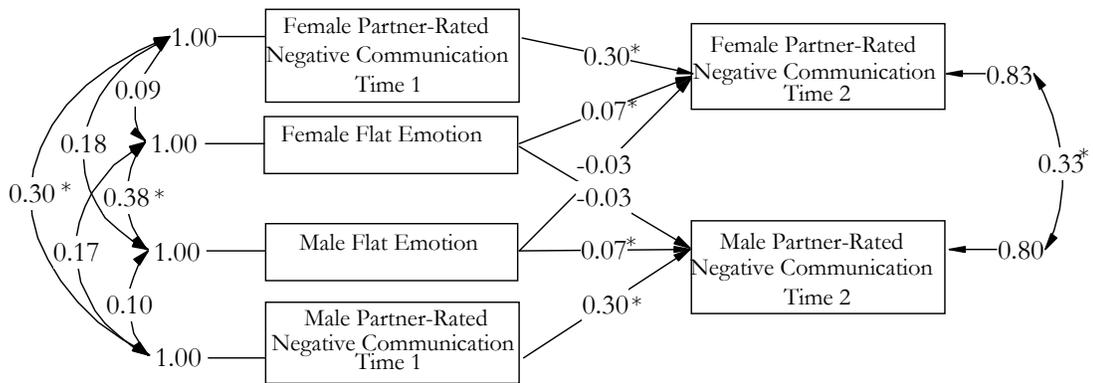


Figure B16. Path Diagram and Standardized Regression Coefficients for Flat Emotion Predicting Partner-Rated Negative Communication. Chi-Square = 4.11, df = 5, P-value = 0.53, RMSEA = 0; Curved arrows represent correlations; Straight arrows represent pathways between predictor and outcome variables; * p value < or = .05

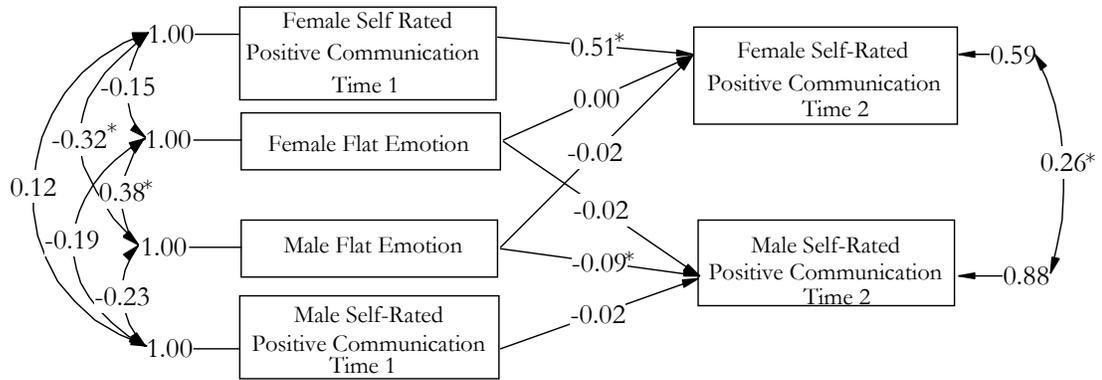


Figure B17. Path Diagram and Standardized Regression Coefficients for Flat Emotion Predicting Self-Rated Positive Communication. Chi-Square = 6.74, df = 3, P-value = 0.08, RMSEA = 0.14; Curved arrows represent correlations; Straight arrows represent pathways between predictor and outcome variables; * p value < or = .05

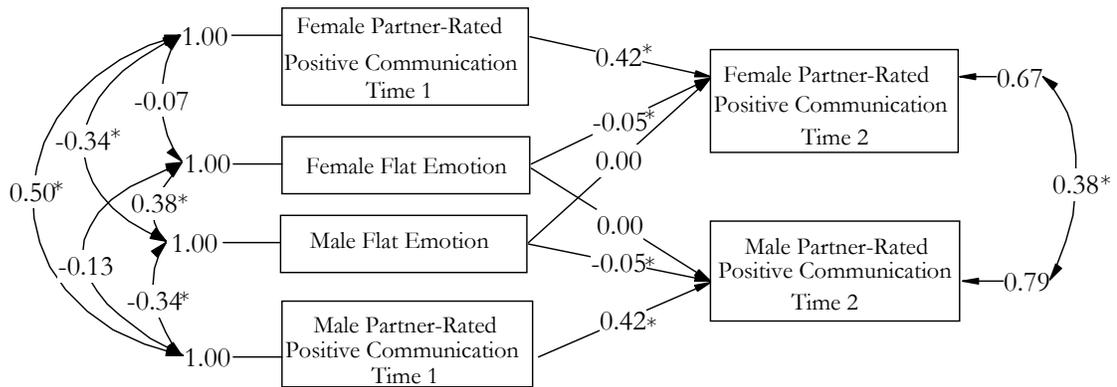


Figure B18. Path Diagram and Standardized Regression Coefficients for Flat Emotion Predicting Partner-Rated Positive Communication. Chi-Square = 8.80, df = 5, P-value = 0.12, RMSEA = 0.11; Curved arrows represent correlations; Straight arrows represent pathways between predictor and outcome variables; * p value < or = .05

REFERENCES

- Alloy, L. B., & Abramson, L. Y. (1979). Judgment of contingency in depressed and nondepressed students: Sadder but wiser? *Journal of Experimental Psychology: General*, *108*(4), 441-485.
- Ambady, N., & Gray, H. M. (2002). On being sad and mistaken: Mood effects on the accuracy of thin-slice judgments. *Journal of Personality and Social Psychology*, *83*(4), 947-961.
- Atkinson, A. P., & Adolphs, R. (2005). Visual emotion perception: Mechanisms and processes. In L. F. Barrett, P. M. Niedenthal & P. Winkielman (Eds.), *Emotion and consciousness*. (pp. 150-182). New York, NY, US: Guilford Press.
- Averill, J. R. (1983). Studies on anger and aggression. implications for theories of emotion. *The American Psychologist*, *38*(11), 1145-1160.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*(3), 497-529.
- Baumeister, R. F., Vohs, K. D., DeWall, C. N., & Zhang, L. (2007). How emotion shapes behavior: Feedback, anticipation, and reflection, rather than direct causation. *Personality and Social Psychology Review*, *11*(2), 167-203.
- Beach, S. R. H. (2001). Expanding the study of dyadic conflict: The potential role of self-evaluation maintenance processes. In A. Booth, A. C. Crouter, M. Clements, A. Booth, A. C. Crouter & M. Clements (Eds.), *Couples in conflict*. (pp. 83-94). Mahwah, NJ US: Lawrence Erlbaum Associates Publishers.
- Berns, S. B., Jacobson, N. S., & Gottman, J. M. (1999). Demand-withdraw interaction in couples with a violent husband. *Journal of Consulting and Clinical Psychology*, *67*(5), 666-674.
- Bodenhausen, G. V., Gabriel, S., & Lineberger, M. (2000). Sadness and susceptibility to judgmental bias: The case of anchoring. *Psychological Science*, *11*(4), 320-323.
- Bodenhausen, G. V., Sheppard, L. A., & Kramer, G. P. (1994). Negative affect and social judgment: The differential impact of anger and sadness. *European Journal of Social Psychology*, *24*(1), 45-62.
- Bollen, K. A. (1989). *Structural equations with latent variables*. New York: Wiley.

- Bradbury, T. N., Beach, S. R. H., Fincham, F. D., & Nelson, G. M. (1996). Attributions and behavior in functional and dysfunctional marriages. *Journal of Consulting and Clinical Psychology, 64*(3), 569-576.
- Bradbury, T. N., & Fincham, F. D. (1991). A contextual model for advancing the study of marital interaction. In G. J. O. Fletcher & F. D. Fincham (Eds.), *Cognition in close relationships* (pp. 127-147). Hillsdale, NJ: Erlbaum.
- Bradbury, T. N., & Fincham, F. D. (1992). Attributions and behavior in marital interaction. *Journal of Personality and Social Psychology, 63*(4), 613-628.
- Bradley, M. M., Greenwald, M. K., Petry, M. C., & Lang, P. J. (1992). Remembering pictures: Pleasure and arousal in memory. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 18*(2), 379-390.
- Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson, & W. S. Rholes (Eds.), *Attachment theory and close relationships*. (pp. 46-76). New York, NY, US: Guilford Press.
- Brewin, C. R. & Lennard, H. (1999). Effects of writing on emotional narratives. *Journal of Traumatic Stress, 12* (2), 355-361.
- Buchanan, T. W. (2007). Retrieval of emotional memories. *Psychological Bulletin, 133* (5), 761-779.
- Busby, D. M., Holman, T. B., & Taniguchi, N. (2001). Relate: Relationship evaluation of the individual, cultural, and couple contexts. *Family Relations, 50*(4), 308-316.
- Christensen, A., & Heavey, C. L. (1990). Gender and social structure in the demand/withdraw pattern of marital conflict. *Journal of Personality and Social Psychology, 59*(1), 73-81.
- Christensen, A., & Jacobson, N. S. (2000). *Reconcilable differences*. New York, NY US: Guilford Press.
- Christensen, A., Jacobson, N. S., & Babcock, J. C. (1995). Integrative behavioral couple therapy. In N. S. Jacobson, & A. S. Gurman (Eds.), *Clinical handbook of couple therapy*. (pp. 31-64). New York, NY, US: Guilford Press.
- Christianson, S. A. (1992). *The handbook of emotion and memory: Research and theory*. Mahwah, NJ: Erlbaum.
- Clements, M. L., Cordova, A. D., Markman, H. J., & Laurenceau, J. (1997). The erosion of marital satisfaction over time and how to prevent it. In R. J. Sternberg, M. Hojjat, R. J. Sternberg & M. Hojjat (Eds.), *Satisfaction in close relationships*. (pp. 335-355). New York, NY US: Guilford Press.

- Cohen, G., Conway, M. A., & Maylor, E. A. (1994). Flashbulb memories in older adults. *Psychology and Aging, 9*, 454-463.
- Cook, W. L., & Snyder, D. K. (2005). Analyzing nonindependent outcomes in couple therapy using the actor-partner interdependence model. *Journal of Family Psychology, 19*(1), 133-141.
- Coombs, R. H. (1991). Marital status and personal well-being: A literature review. *Family Relations, 40*(1), 97-102.
- Cordova, J. V., Jacobson, N. S., & Christensen, A. (1998). Acceptance versus change interventions in behavioral couple therapy: Impact on couples' in-session communication. *Journal of Marital & Family Therapy, 24*(4), 437-455.
- DeSteno, D., Dasgupta, N., Bartlett, M. Y., & Caidric, A. (2004). Research article prejudice from thin air the effect of emotion on automatic intergroup attitudes. *Psychological Science, 15*(5), 319-324.
- Dimidjian, S., Martell, C. R., & Christensen, A. (2002). Integrative behavioral coupletherapy. In A. S. Gurman & N. S. Jacobson (Eds.), *Clinical handbook of coupletherapy (3rd ed., pp. 251-277)*. New York: Guilford Press.
- Dunn, J. R., & Schweitzer, M. E. (2005). Feeling and believing: The influence of emotion on trust. *Journal of Personality and Social Psychology, 88*(5), 736-748.
- Feeney, J. A., Noller, P., & Roberts, N. (1998). Emotion, attachment, and satisfaction in close relationships. In P. A. Andersen, & L. K. Guerrero (Eds.), *Handbook of communication and emotion: Research, theory, applications, and contexts.* (pp. 473-505). San Diego, CA, US: Academic Press.
- Fiedler, K., Nickel, S., Muehlfriedel, T., & Unkelbach, C. (2001). Is mood congruency an effect of genuine memory or response bias? *Journal of Experimental Social Psychology, 37*(3), 201.
- Fincham, F. D., & Bradbury, T. N. (1992). Assessing attributions in marriage: The relationship attribution measure. *Journal of Personality and Social Psychology, 62*(3), 457-468.
- Finkel, E. J., & Clark, M. S. (2002, July). Facilitated emotional expression: One pathway linking relationship variables to health. Paper presented at the 11th International Conference on Personal Relationships, Halifax, Nova Scotia, Canada. In Sanford, K. (2007). Hard and soft emotion during conflict: Investigating married couples and other relationships. *Personal Relationships, 14*, 65-90.
- Garson, G. D. (2009) Structural equation modeling. Retrieved May 5, 2009, from North Carolina State University Faculty Web site: <http://faculty.chass.ncsu.edu/garson/PA765/structur.html>.

- Gilboa, E., Roberts, J. E., & Gotlib, I. H. (1997). The effects of induced and naturally occurring dysphoric mood on biases in self-evaluation and memory. *Cognition & Emotion, 11*(1), 65-82.
- Gleicher, F., & Weary, G. (1991). Effect of depression on quantity and quality of social inferences. *Journal of Personality and Social Psychology, 61*(1), 105-114.
- Gollwitzer, P. M. (1999). Implementation intentions: Strong effects of simple plans. *American Psychologist, 54*(7), 493-503.
- Gottman, J. M. (1993). A theory of marital dissolution and stability. *Journal of Family Psychology, 7*(1), 57-75.
- Gottman, J. M. (1996). What predicts divorce? The measures. Mahwah, NJ: Erlbaum.
- Gottman, J. M., & Levenson, R. W. (1986). Assessing the role of emotion in marriage. *Behavioral Assessment, 8*(1), 31-48.
- Gottman JM, McCoy K, Coan J. (1996). The Specific Affect Coding System. In: Gottman JM, editor. *What predicts divorce? The measures*. Hillsdale, NJ: Erlbaum.
- Greenberg, L. S. & Johnson, S. M. (1988). *Emotionally focused therapy for couples*. New York: Guilford Press.
- Heavey, C. L., Christensen, A., & Malamuth, N. M. (1995). The longitudinal impact of demand and withdrawal during marital conflict. *Journal of Consulting and Clinical Psychology, 63*(5), 797-801.
- Hoeffferth, S. L. & Casper, L. M. (2007) *Handbook of measurement issues in family research*. Philadelphia: Lawrence Erlbaum Associates
- Hu, L. and P. M. Bentler (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling 6*(1): 1-55.
- Jacobson, N. S., & Christensen, A. (1996). *Integrative couple therapy: Promoting acceptance and change*. New York: W W Norton & Co.
- Johnson, M. D. (2002). The observation of specific affect in marital interactions: Psychometric properties of a coding system and a rating system. *Psychological Assessment, 14*(4), 423-438.
- Johnson, S. M. (2004). *The practice of emotionally focused couple therapy: Creating connection* (2nd ed.). New York: Brunner-Routledge.
- Johnson, S. M., & Greenberg, L. S. (1988). Relating process to outcome in marital therapy. *Journal of Marital & Family Therapy, 14*(2), 175-183.

- Joreskog, K., & Sorbom, D. (1993). LISREL 8: Manual, Scientific Software, Mooresville, IN.
- Karney, B. R., & Bradbury, T. N. (1995). The longitudinal course of marital quality and stability: A review of theory, methods, and research. *Psychological Bulletin*, 118(1), 3-34.
- Kashy, D. A., & Kenny, D. A. (2000). The analysis of data from dyads and groups. In H. T. Reis, C. M. Judd, H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology*. (pp. 451-477). New York, NY US: Cambridge University Press.
- Keltner, D., Ellsworth, P. C., & Edwards, K. (1993). Beyond simple pessimism: Effects of sadness and anger on social perception. *Journal of Personality and Social Psychology*, 64(5), 740-752.
- Kiecolt-Glaser, J. K., Newton, T., Cacioppo, J. T., MacCallum, R. C., Glaser, R., & Malarkey, W. B. (1996). Marital conflict and endocrine function: Are men really more physiologically affected than women? *Journal of Consulting and Clinical Psychology*, 64(2), 324-332.
- Kleinsmith, L. J., & Kaplan, S. (1963). Paired-associate learning as a function of arousal and interpolated interval. *Journal of Experimental Psychology*, 65(2), 190-193.
- Lazarus, R. S. (1991). *Emotion and adaptation*. New York: Oxford University Press.
- Leary, M. R. (2002). When selves collide: The nature of the self and the dynamics of interpersonal relationships. In A. Tesser, D. A. Stapel, J. V. Wood, A. Tesser, D. A. Stapel & J. V. Wood (Eds.), *Self and motivation: Emerging psychological perspectives*. (pp. 119-145). Washington, DC US: American Psychological Association.
- Leith, K. P., & Baumeister, R. F. (1996). Why do bad moods increase self-defeating behavior? emotion, risk taking, and self-regulation. *Journal of Personality and Social Psychology*, 71(6), 1250-1267.
- Lerner, J. S., Goldberg, J. H., & Tetlock, P. E. (1998). Sober second thought: The effects of accountability, anger, and authoritarianism on attributions of responsibility. *Personality and Social Psychology Bulletin*, 24(6), 563-574.
- Lerner, J.S., & Keltner, D. (2001). Fear, anger, and risk. *Journal of Personality and Social Psychology*, 81, 146-159.
- Lerner, J. S., Small, D. A., & Loewenstein, G. (2004). Heart strings and purse strings: Carry-over effects of emotions on economic transactions. *Psychological Science*, 15, 337-341.
- Loehlin, J. C. (1992). *Latent variable models: An introduction to factor, path, and structural analysis*. Hillsdale, NJ: Lawrence Erlbaum.

- Loewenstein, G., & Lerner, J. S. (2003). The role of affect in decision making. In R. Davidson, K. Scherer & H. Goldsmith (Eds.), *Handbook of affective science* (pp. 619-642). New York: Oxford University Press.
- Lundqvist, D., & Öhman, A. (2005). Emotion regulates attention: The relation between facial configurations, facial emotion, and visual attention. *Visual Cognition*, *12*(1), 51-84.
- Markman, H. J., & Notarius, C. I. (1987). Coding marital and family interaction: Current status. In T. Jacob, & T. Jacob (Eds.), *Family interaction and psychopathology: Theories, methods, and findings*. (pp. 329-390). New York, NY US: Plenum Press.
- McGaugh, J. L. (2000). Memory: A century of consolidation. *Science*, *287*(5451), 248-251.
- Microsoft Corporation (2003). Microsoft Office Access (Version 11). Bellevue, WA: Microsoft Corporation.
- Norton, R. (1983). Measuring marital quality: A critical look at the dependent variable. *Journal of Marriage & Family*, *45*(1), 141.
- Ochsner, K. N., & Phelps, E. (2007). Emerging perspectives on emotion-cognition interactions. *Trends in Cognitive Sciences*, *11*(8), 317-318.
- Paton, J. J., Belova, M. A., Morrison, S. E., Salzman, C. D. (2006). The primate amygdala represents the positive and negative value of visual stimuli during learning. *Nature*, *439*, 865-870.
- Pennebaker, J. W., Kiecolt-Glaser, J., & Glaser, R. (1988). Disclosure of traumas and immune function: Health implications for psychotherapy. *Journal of Consulting and Clinical Psychology*, *56*(2), 239-245.
- Phelps, E. A. (2005). The interaction of emotion and cognition: Insights from studies of the human amygdala. In L. F. Barrett, P. M. Niedenthal & P. Winkielman (Eds.), *Emotion and consciousness*. (pp. 51-66). New York, NY, US: Guilford Press.
- Quigley, B. M., & Tedeschi, J. T. (1996). Mediating effects of blame attributions on feelings of anger. *Personality and Social Psychology Bulletin*, *22*(12), 1280-1288.
- Quirk, G. J., Likhtik, E., Pelletier, J. G., & Pare, D. (2003). Stimulation of medial prefrontal cortex decreases the responsiveness of central amygdala output neurons. *Journal of Neuroscience*, *23*(25), 8800.
- Reisberg, D., & Hertel, P. (2005). *Memory and emotion*. New York: Oxford University Press.
- Ryan, R. M., & Deci, E. L. (2000). The darker and brighter sides of human existence: Basic psychological needs as a unifying concept. *Psychological Inquiry*, *11*(4), 319-338.

- Sanford, K. (2003a). Expectancies and communication behavior in marriage: Distinguishing proximal-level effects from distal-level effects. *Journal of Social and Personal Relationships, 20*, 391-402).
- Sanford, K. (2003b). Problem-solving conversations in marriage: Does it matter what topics couples discuss? *Personal Relationships, 10*, 97-112.
- Sanford, K. (2005). Attributions and anger in early marriage: Wives are event-dependent and husbands are schematic. *Journal of Family Psychology, 19*(2), 180-188.
- Sanford, K. (2006). Communication during marital conflict: When couples alter their appraisal, they change their behavior. *Journal of Family Psychology, 20*(2), 256-265.
- Sanford, K. (2007a). The couples emotion rating form: Psychometric properties and theoretical associations. *Psychological Assessment, 19*(4), 411-421.
- Sanford, K. (2007b). Hard and soft emotion during conflict: Investigating married couples and other relationships. *Personal Relationships, 14*(1), 65-90.
- Sanford, K., & Rowatt, W. C. (2004). When is negative emotion positive for relationships? an investigation of married couples and roommates. *Personal Relationships, 11*(3), 329-354.
- Schacter, D. L. (1996). *Searching for memory: The brain, the mind, and the past*. New York: Basic Books.
- Seibert, P. S., & Ellis, H. C. (1991). A convenient self-referencing mood induction procedure. *Bulletin of the Psychonomic Society, 29*(2), 121-124.
- Small, D. A., Lerner, J. S., & Fischhoff, B. (2006). Emotion priming and attributions for terrorism: Americans' reactions in a national field experiment. *Political Psychology, 27*(2), 289-298.
- Smith, A. P. R., Dolan, R. J., & Rugg, M. D. (2004). Event-related potential correlates of the retrieval of emotional and nonemotional context. *Journal of Cognitive Neuroscience, 16*(5), 760-775.
- Strack, F., Schwarz, N., & Gschneidinger, E. (1985). Happiness and reminiscing: The role of time perspective, affect, and mode of thinking. *Journal of Personality and Social Psychology, 49*, 1460-1469.
- Tashiro, T., & Frazier, P. (2007). The causal effects of emotion on couples' cognition and behavior. *Journal of Counseling Psychology, 54*(4), 409-422.
- Tiedens, L. Z., & Linton, S. (2001). Judgment under emotional certainty and uncertainty: The effects of specific emotions on information processing. *Journal of Personality and Social Psychology, 81*(6), 973-988.

- Varner, L. J., & Ellis, H. C. (1998). Cognitive activity and physiological arousal: Processes that mediate mood-congruent memory. *Memory & Cognition*, 26(5), 939.
- Waldinger, R. J., Schulz, M. S., Hauser, S. T., Allen, J. P., & Crowell, J. A. (2004). Reading others' emotions: The role of intuitive judgments in predicting marital satisfaction, quality, and stability. *Journal of Family Psychology*, 18(1), 58-71.
- Watson, D., Wiese, D., Vaidya, J., & Tellegen, A. (1999). The two general activation systems of affect: Structural findings, evolutionary considerations, and psychobiological evidence. *Journal of Personality and Social Psychology*, 76(5), 820-838.
- Weiner, B. (1980). A cognitive (attribution)-emotion-action model of motivated behavior: An analysis of judgments of help-giving. *Journal of Personality and Social Psychology*, 39(2), 186-200.
- Weiss, R. L., & Heyman, R. E. (1997). A clinical-research overview of couples interactions. In W. K. Halford, H. J. Markman, W. K. Halford & H. J. Markman (Eds.), *Clinical handbook of marriage and couples interventions*. (pp. 13-41). Hoboken, NJ US: John Wiley & Sons Inc.
- Wenzlaff, R. M., Wegner, D. M., & Roper, D. W. (1988). Depression and mental control: The resurgence of unwanted negative thoughts. *Journal of Personality and Social Psychology*, 55(6), 882-892.
- Zeidner, M., Matthews, G., Roberts, R.D., & McCann, C. (2003). Development of Emotional Intelligence: Towards a Multi-Level Investment Model. *Human Development*, 46, 69-96.
- Zeifman, D., & Hazan, C. (1997). Attachment: The bond in pair-bonds. In J. A. Simpson, & D. T. Kenrick (Eds.), *Evolutionary social psychology*. (pp. 237-263). Hillsdale, NJ, England: Lawrence Erlbaum Associates, Inc.