

ABSTRACT

Stress and Positive Dyadic Interaction: A Daily Diary Study

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The present study investigated the relationship between stress, positive communication, and relationship satisfaction. Theoretically, increased exposure to stress has been linked to decreases in relationship satisfaction. The hypothesized pathways through which this occurs includes positive communication behavior and affect. This study used the daily diary technique to gather data regarding couple interaction from 80 undergraduate students over the course of five days. Hierarchical linear modeling was used to analyze within-person and between-person effects. As expected, this study found a negative relationship between exposure to daily stressors and relationship satisfaction at the within-person level. This effect is mediated by negative affect but not positive affect also at the within-person level. Due to high correlation between the positive communication and couple satisfaction measures, the positive communication mediation pathway could not be assessed. The implications of these results and areas for future study are discussed.

Stress and Positive Dyadic Interaction:
A Daily Diary Study

by

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A Dissertation

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DEDICATION

My mother, Thankamani, my heart

My father, Paul, my backbone

My brother, Jimmy, my courage

My sister-in-law, Ancy, my faith

My niece, Isabelle, my hope

My aunt, Alice, my wisdom

My best friend, William, my soul

My friends, Magnolia, Nikki, Jenny, Sarah,
Kelsie, Miriam, & Carrick, my strength

“Call it a clan, call it a network, call it a tribe, call it a family: Whatever you call it,
whoever you are, you need one.” – Jane Howard

CHAPTER ONE

Introduction

In 1949, Reuben Hill published *Families Under Stress*, his work that indicated that families who experienced greater stressors had a more difficult time maintaining a cohesive family unit (McCubbin & Patterson, 1983). Since this study, there has been growing interest in how external stress can affect processes within romantic relationships, especially in regards to positive interpersonal interactions. Understanding the effect of stress on these positive communication patterns is essential as researchers have found that positive communication can separate satisfied couples from dissatisfied couples (Gottman, 1982; Meeks, Hendrick, & Hendrick, 1998). While much of the work in positive communication, including the aforementioned studies, focuses on skills specifically related to conflict resolution, other types of positive communication behaviors have been identified as equally important (Holman, 2002). One emerging area of interest, and the focus of the current study, is *everyday positive communication*. Unlike specific conflict related positive communication skills, such as reflective listening, these are casual positive behaviors that successful couples engage in throughout the day. Like conflict based positive communication, it is likely that these too are impacted by stress. So how does positive every day communication function under daily stress? Furthermore, how exactly is positive every day communication related to relationship satisfaction?

Positive Communication

In an introductory article to positive psychology Seligman and Csikszentmihalyi (2000) called for psychology to increase attention on positive human functioning. Since then, other researchers have echoed this need to identify healthy relationship patterns and behavior (Lopez & Snyder, 2003). In regards to close relationships, this call requires a shift in research from factors that help couples survive to factors that help couples thrive. As previously mentioned, early researchers in the field of intimate relationships have identified positive communication as essential to thriving relationships even going so far as to refer to it as the “lifeblood” (Bienvenu, 1969; Bienvenu, 1975).

So far researchers have found that developing everyday positive communication patterns are representative of “strong” relationships (Stinnett and Sauer, 1977) and are important for couples to reach consensus and succeed at pivotal relational tasks (Larson & Holman, 1994). Furthermore, Knapp and Vangelisti’s (1996) model of relational development is partially founded on positive interpersonal behaviors that are representative of a couple “coming together”. Coming together behaviors are essential every day positive behaviors that help a couple build intimacy and a sense of unity. It should be noted that their model also includes “coming apart” behaviors that are present during relational decay. While the current study focuses only on positive everyday behaviors, it is significant that Knapp and Vangelisti (1996) distinguish positive building behaviors from negative deteriorating behaviors. By highlighting this distinction, they propose that positive and negative communication behaviors are not two poles of one larger continuum, which has been the traditional viewpoint. This key point illustrates the need to study positive communication behaviors independently rather than merely using

information gathered on negative communication to make inferences regarding positive communication. So what types of behaviors exemplify every day positive communication?

Again, Knapp and Vangelisti's (1996) relational developmental model provides some clarity on the subject. In the initiation stage, a primary positive communication behavior is defined as *greeting*. Greeting requires acknowledging the partner and perhaps a casual question or remark such as "Hi Tom. How are you?". In the next stage, experimenting, positive communication behavior is defined as *small talk*. Small talk can encompass a variety of topics but remains on a superficial level such as discussing a movie or restaurant. This type of positive behavior allows partners to casually engage and build connection without a significant risk of conflict or rejection. It is also used as a building block for more intimate discussion. In the next stage, intensifying, a couple engages in deeper levels of disclosure and takes bigger risks. At the same time, couples also engage in making *statements of positive regard* and commitment for example "You are my best friend". In the next stage, integrating, couples put emphasis on what is shared between them including attitudes, opinions, and interests. While these positive behaviors are indicated in different stages of building intimacy in relationships, it is likely that these behaviors continue at some level in every day couple behavior even after a couple has reached the bonding stage, the final stage of coming together.

Empirical results parallel Knapp and Vangelisti's (1996) model. For example, Punyanunt-Carter (2004) studied 100 couples and found that supportive positive communication was related to relationship satisfaction in both dating and married couples. In their study, they identified supportive every day positive communication as

as complimenting one's partner, giving praise, helping with problems, and acknowledging birthdays. A review by Shumway and Wampler (2002) of the limited studies on every day behaviors that separate successful marriages from unsuccessful relationships identified several types of positive everyday couple behavior similar to those indicated in the aforementioned model. From this list, four types are related to verbal communication: *greeting and calling the partner by name, talking to partner about common events, praising, and providing appropriate feedback*. Presumably, these are the types of positive communication behaviors that successful couples engage in on a daily basis. The present study will look at these types of behavior.

Stress and Positive Communication

Burleson and Denton (1997) noted that stress seemed to change the relevance of communication skills with couples. An early indication that stress has relevance in a couple's communication behavior comes from a study by Bolger, DeLongis, Kessler, and Wethington (1989) who presented one of the first quantitative studies that traced the effects of stressors within the romantic dyad. In this study, participants completed a short questionnaire, termed a daily diary, for six weeks. By analyzing patterns presented in these daily diaries, the researchers found that stresses had a contagion effect in which stresses from one area of life could impact another area of life. Furthermore, stresses experienced by one partner could lead to stresses for the other partner. So how exactly is stress related to communication quality?

One answer to how positive communication functions under stress comes from Guy Bodenmann (2005) who posits that stress has a negative relationship with communication quality in that as stress increases communication quality decreases

(Bodenmann, Ledermann, & Bradbury, 2007). In his model, he specifically focuses on the effects of *acute minor external stresses*, the type of every day hurdles that all people have to face. It is important to define *acute minor external stresses* as it specifically applies to Bodenmann's model and the present study. These are short simple stresses that come from outside of the relationship. Although a couple may typically refer to most negative everyday events as a stressor, true stress is an "an excessive threat, demand, or constraint" (Wheaton, 1997, p. 193). Investigating acute minor external stressors is important for several reasons. First the effects of these acute stressors can be seen over the course of a few days, which is not only practical from a research standpoint but also informative in regards to the fluid nature of stress dyadic interaction. Furthermore, Bodenmann (2005) proposes that acute minor external stressors have specific detrimental effects on daily interactions because acute minor stressors can often compound into role strain, which has significant negative effects on relationship functioning (Allen, Herst, Bruck, & Sutton, 2000; Brock & Lawrence, 2008; Karney, Story, & Bradbury, 2005; Kiecolt-Glaser & Newton, 2001; Quittner, Espelage, Opiari, Carter, & Eigen 1998).

It should be noted that in Bodenmann's (2005) model, the decreased communication quality pathway is facilitated both by a decrease of positive communication, of interest in this study, and an increase in negative communication and withdrawal. This proposition was developed due to results from a 1992 pilot study by Guy Bodenmann and Meinrad Perrez in which 22 couples were assessed for communication patterns before and after stress induction (Bodenmann & Shantinath, 2004). They noted a general trend in decreased positive behavior and increased negative behavior. A 2000 follow up study in which Bodenmann videotaped 70 couples for 10

minutes before and after stress induction found similar results (Bodenmann & Shantinath, 2004). Specifically, he found that communication quality, represented by decreased positive interactions and increased negative interactions, decreased by 40% after stress induction.

Thus far, researchers have found consistent results connecting stress and negative communication and withdrawal. Reviewing this literature reveals clues to connections between positive communication and stress. In 1989 Rena Repetti published her work on the effects of stress on the relationships of air traffic controllers. Again using the daily diary method over three days, Repetti (1989) investigated the effects of work place stress on marital interactions at home. Looking specifically at changes in spousal withdrawal and anger, she found increased levels of withdrawal and anger on stressful days. Crouter, Perry-Jenkins, Huston, and Crawford (1989) interviewed men after work across two days. They found that high stress experienced throughout the day was associated with low involvement in housework and an increase in negative marital interactions.

Overall, research results support the idea that partners reported more negative interpersonal conflicts with their partner during the days in which they either had a heavy workload or had already experienced stressful encounters with colleagues or employers (Barling, 1990; Bolger et al., 1989; Crouter, Bumpus, Head, & McHale, 2001; Karney et al., 2005; Repetti & Wood, 1997). Partners also tend to be less sensitive or responsive to family members after a high stress day (Crouter et al., 2001; Repetti, 1987; Repetti, 1989). This lack of sensitivity or responsiveness represented withdrawal behaviors which was found in men and women following days of negative workplace interactions and also in wives following heavy workload days (Barling, 1990; Story & Repetti, 2006). Even

when significant others were supportive, the stressed partner was likely to physically withdraw (Repetti 1989). Furthermore, there was also a significant negative correlation found between dyadic consensus and increased stress (Williams, 1995). As stress increased, the likelihood of consensus decreased. While these studies provide evidence that couples engage in increasingly negative communication behaviors under stress (Repetti, 1987; Repetti, 1989; Story & Repetti, 2006), it seems likely that stress may also be important in predicting positive interactive behavior (Bodenmann, 2005). In this direction, using the daily diary method, Halford, Gravestock, Lowe, and Scheldt (1992) found that couples reported more negative interactions during workdays and more satisfying interactions on the weekend when stress was lower.

Mediating Pathways Between Stress and Relationship Satisfaction

Communication

In Bodenmann's (2005) model, the relationship between stress and positive communication extends further to relationship satisfaction. The pathway between stress and global relationship functioning has been well studied. Bodenmann followed up with his the participants of his stress induction study on a yearly basis for five years and found that long term stress was related to poor relationship development and increased likelihood of divorce, which is presumably related to relationship satisfaction (Widmer & Bodenmann, 2004). Research in the area of acute daily stress has also continued to strengthen the premise that stress is a factor that can be harmful to not only interpersonal interactions but also to global relationship satisfaction (Karney & Bradbury, 1995; Karney & Bradbury, 2005; Karney et al., 2005; Story & Bradbury, 2004). The negative

correlations between stress and relationship quality tend to be moderate ranging from $-.22$ to $-.59$ (Bodenmann & Shantinath, 2004).

In line with the early pilot studies, evidence for daily workplace stress leading to negative relationship functioning has been especially strong (Crouter et al., 2001; Neff & Karney, 2004; Repetti & Wood 1997; Story & Repetti, 2006; Thompson & Bolger, 1999). For instance, Crouter, Bumpus, Head, and McHale (2001) found that while long hours spent at work did not affect relationship quality, exposure to work stress predicted poorer relationship quality. This indicates that it is the subjective experience of stress, as an excessive demand, rather than objective measure of workload that predicts changes in relationship satisfaction. In addition to work place stress, other environmental stressors like financial difficulties (Conger, Rueter, & Edler, 1999) or death of a child (Kamm & Vandenberg, 2001) have been found to be associated with negative relationship satisfaction over time. While these studies did not use the daily diary technique and also focus on more chronic stressors, these results provide some insight into the general effect of environmental stressors on relationship satisfaction. Just how does an external stressor impact internal appraisals of relationship satisfaction?

Bodenman (2005) identifies communication quality as unique mediator between stress and relationship satisfaction. It should be noted that Bodenmann (2005), while indicating that communication quality and relational satisfaction are related, identifies them as two separate constructs. Specifically, relationship satisfaction is a cognitive appraisal of the relationship whereas positive daily interaction represents overt behaviors during couple interactions. As such, they represent two distinct areas of human functioning, cognition and behavior.

Bodenmann's (2005) mediation model goes on to specify that as stress increases, positive communication decreases and negative communication increases which leads to decreased relationship satisfaction. There have been general findings that indicate that changes in communication patterns are related to relationship satisfaction (Anderson & Emmers-Somer, 2006; Meeks et al., 1998). Research also indicates that that negative interactions and withdrawal were related to lowered relational satisfaction (Stanley, Whitton, & Markman, 1994). Most relevant to the current study is the evidence that positive conflict communication skills are positively related to relationship satisfaction. This literature also provides clues to the functions of everyday positive communication. In one of the earliest studies in this area, Howard Markman (1979) found that couples that rated their interactions more positively were more satisfied with their relationship 2½-years later. Markman (1981) completed a follow up study that indicated that this result also held up with a 5½-year time line. More recently, Burleson and Denton (1997) found that in non-distressed couples, marital satisfaction and good communication skills were positively related. Conversely, a 1994 survey found that, especially for women, lowered rates of positive communication were also related to lowered relational satisfaction (Stanley et al., 1994). Researchers have also found that reducing negative communication and maximizing positive communication during conflict improves relationship satisfaction (Cox, Paley, Payne & Burchinal, 1999). Given a body of research showing that positive conflict communication is related to satisfaction, it seems likely that other types of positive behavior, such as positive daily interactions, will also be related to satisfaction. Per Bodenmann's (2005) model, positive everyday communication works as a mediator between stress and relationship satisfaction such that

as stress increases, positive communication will decrease, and relational satisfaction will also decrease.

Affect

It is important to note that the present study does not assume that communication is the only mediating pathway between stress and relationship satisfaction. It is also necessary to consider the mediation effects of affect. Affect is the basic representation of a person's inner state. Watson and Tellegen (1985) analyzed the structure of affect and come up with a two-factor model: positive affect and negative affect. Positive affect is a state of pleasure whereas negative affect is a state of distress. It is important to consider affect as another important mediator due to the strong relationship between stress and affect. For example, hassles experienced during the day could be used to predict end of day mood (Zohar, 1999). Before further detailing the relationship between stress and affect, it is important to distinguish the uniqueness of positive and negative affect as two separate factors.

As with communication, there has been some debate regarding whether positive affect and negative affect represents polar ends of one larger continuum or whether they are indeed two unique factors. For example, it was argued that it was counterintuitive to think of positive and negative affect as independent factors due to previous measures of positive and negative affect showing moderate negative correlations and also due to factor analysis issues (Costa & McCrae, 1980; Russell & Carroll, 1999). However, Watson, Clark, & Tellegen (1988) proposed that the aforementioned negative correlations were due to limitations of the previous measures. Watson, Wiese, Vaidya, and Tellegen (1999) went on to propose that positive and negative affect were representative of

biological systems of approach and withdrawal. They noted that while these systems represent two separate entities, they do not work completely independently of each other and therefore moderate correlations are expected. A more recent study attempted to test this and found that positive affect and negative affect are indeed relatively but not completely independent (Crawford & Henry, 2004). Since these factors are more than merely opposite ends of the spectrum, it's important to identify each affect's relationship with stress.

Stress seems to be primarily linked to negative affect such that as perceived stress increases, negative affect increases (Bolger et al., 1999; Clark & Watson, 1988; Watson, 1988; Watson, Clark, & Tellegen, 1988; Watson & Pennebaker, 1989). In fact, Wallace (2006) noted that increases in levels of stress are associated with the daily experience of negative affect. Repetti (1993) noted that air traffic controllers who reported greater stress at work also reported increased negative mood, an extended negative affective state. Furthermore, affect has been associated with executive functions such as attention, perception, thinking, judgment, mental stimulation, and memory retrieval (Russell, 2003). All of these processes are involved in cognitive appraisals such as relationship satisfaction. These functions have also been found to be affect-congruent (Russell, 2003; Russell, 2009). For example when one is experiencing negative affect one tends to attend to and retrieve negatively valenced material. Thus, if events and affects are related and affect leads to affect-congruent responses then exposure to daily stressors, negative events, should result in increases negative affect.

On the other hand, perceived stress seems to have little to do with positive affect. Yet, engagement in social activity is significantly related to positive affect such that a

decrease in social activity is related to a decrease in positive affect (Clark & Watson, 1986; Watson et al., 1988). This relationship is especially important in regards to stress considering the earlier studies on the effects of stress on romantic couples. One consistent finding in the stress literature is that many individuals who experience increased stressors tend to engage in social withdrawal (Barling, 1990; Crouter et al., 2001; Repetti, 1987; Repetti, 1989; Story & Repetti, 2006). If stress is indeed related to social withdrawal and social withdrawal is linked to decreases in positive affect, it is likely that as stress increases positive affect will also decrease. It has also been noted that when stressors have to do with negative interpersonal interactions at work or at class, positive affect is also decreased (Repetti, 1993; Stone, 1981). An example of this would be engaging in a negative interaction with a co-worker or teacher regarding a project deadline. Furthermore, exposure to daily stressors is also likely to reduce the ability to retrieve positively valenced material, thereby also decreasing positive affect. While positive affect and negative affect have opposite reactions to stress, it should be noted that these reactions are the result of unique pathways. Negative affect increases due to perceived stress while positive affect decreases through social activity.

In addition to the connection to stress, affect also has a connection to relationship satisfaction. In the 1980's John Gottman became a key proponent of the importance of affect in romantic couples (Gottman, 1982; Gottman & Porterfield, 1981; Gottman, & Levenson, 1999). In his research he found that satisfied couples had higher rates of positive to negative affect ratios (Gottman, Coan, Carrere, & Swanson, 1998). In one particular study, he coded 12-minute conversations in newlyweds for positive and negative affect. He found that he was able to predict marital outcomes of partners six

years later using this initial affect coding (Carrere & Gottman, 2004). Other researchers have also found that negative affect is associated with decreased levels of relationship satisfaction. For example, distressed couples, identified as having decreased levels of relationship satisfaction, express more negative affect than non-distressed couples (Bradbury & Karney 1993; Weiss & Heymen 1990). With affect being connected to both stress and relational satisfaction, it becomes clear that affect can be another important mediator in the stress and relationship satisfaction pathway. As stress increases, negative affect increases and positive affect decreases, which leads to an overall decrease in relational satisfaction.

Yet how important is affect? In the present study, affect and communication are both identified as important partial mediators. However, an alternate hypothesis to the mediation model presented in the current study is that affect has such a strong mediation effect that it completely accounts for the stress satisfaction link, a complete mediation model. In this model, increases in exposure to stressors would lead to negative affect, which leads to decreases in relationship satisfaction. Any changes in communication patterns in this model would be secondary to changes in affect. This alternate hypothesis would be representative of an affect spillover hypothesis. Currently, there is evidence for a mood spillover models between work and home. Mood spillover describes the process by which mood from one environment can spillover to mood in another environment (Zedeck, 1992). Spillover can be negative or positive (Wallace, 1997). For example, positive experiences at work could induce positive mood and later increase the likelihood of the individual finding relationship roles to be more satisfying. In this direction, using a daily diary method, Heller and Watson (2005) found positive affect spillover from job

satisfaction to marital satisfaction. Conversely, stress or strain at work could induce negative mood that is carried to home and increases the likelihood that the individual finds relationship roles to be less satisfying. This may also concurrently lead to decreased positive behavior but this change in behavior would merely be a consequence to mood. While the aforementioned mood spillover hypothesis is used mainly from work to family pathways, it is possible that this same process could occur between general daily stressors and relationship satisfaction.

However, in line with the partial mediation pathways suggested in the present model, there is evidence that mood is just one of the possible spillover pathways between home and work. For example, Edwards and Rothbard (2000) describe spillover in four domains: affect, values, skills and behaviors. In this model, it is evident that both affect and behavior, which can include interpersonal interaction, have a place and that any changes between work and home can occur through one or a combination of these mediation pathways. Again, although this highlights mediation pathways between work and home, it is likely that this type of partial mediation model also exists between general stressors and relationship satisfaction. It is proposed in the present study that the communication quality pathway exists above and beyond the effects of the affect pathway so that the positive communication pathway is indeed representative of an independent partial mediation pathway.

Daily Diaries and Within-Person Changes

Since the early pilot studies, daily diaries have been the methodology of choice in studying the effects of stress on romantic relationships (Bolger et al., 1989, Crouter et al., 1989; Repetti, 1989; Shulz, Cowan, Cowan, & Brennan, 2004; Story & Repetti, 2006).

Daily diaries are self-report measures completed daily for a set period of time. The current study follows this tradition due to several methodological advantages that daily diaries provide. First, longitudinal data, like that provided by daily diaries, are important in monitoring acute minor external stress since this type of stress is described as a short-term process with day-to-day variation (Repetti, 1989). With a changing variable like daily minor stress, it is important to have multiple measurements across time to better understand the nature of change. Daily diaries do just that.

Furthermore, self-report methods of assessing variables are important due to the characteristics of the variables of interest. For example, in the present study an external event is only identified as a stressor if the individual cognitively appraises it as “an excessive threat, demand, or constraint” (Wheaton, 1997, p. 193). Also, relationship satisfaction is considered a cognitive appraisal. These types of cognitive processes cannot be directly measured and therefore measurement must rely on self-report methods. Daily diaries provide this and also decrease loss in retrospective self-report by measuring variables relatively close to their time of origin.

It is important to note that the aforementioned daily diary study data are often analyzed for within-person effects rather than between-person effects (Bolger et al., 1989; Repetti, 1989; Story & Repetti, 2006). Within-person effects, sometimes called time-variant effects, refer to changes in an individual over time. Essentially, a person’s specific score on a variable is scored as a deviation away from that person’s mean score on the variable. In contrast, between-person effects describe differences between people in character traits or tendencies. A within-person effect in the present study would be if a person’s daily stress level varied from day to day and this change was related to changes

in his or her communication behavior. A between-person effect for these same variables would be if, after accounting for the within-person effect, a person that tended to report generally high levels of stress is also the type of person that reports generally low levels of positive communication. Since stress is considered a changing variable over time and because related behaviors and affect are also thought to fluctuate over time (Repetti, 1989), it is necessary to pinpoint within-person effects.

Looking at within-person change also addresses the possibility of response bias that often occurs from using self-report measures. Response bias occurs when the responder is interested in presenting in a certain way or has a general way of responding. For example, some respondents like to respond in a way that presents themselves to others in a favorable light. Luckily, statistical analyses can separate out within person effects, the change in the individual across time, from any between-person effects. In this method, characterological factors, like the tendency to respond a certain way, become void.

Overview of Study

This study assessed change in undergraduate students' relationship related positive communication, affect, and couple satisfaction as related to their levels of daily stress. Participants were asked to complete a series of daily diary questionnaires over five consecutive days. During each daily diary entry, participants completed a daily hassles measure, a measure of positive communication, an affect measure, and a measure of relationship satisfaction. The following hypotheses, based on Boddenman's (2005) model, were tested by this design.

1. Within-person changes in an individual's exposure to stress will be associated with within-person changes in an individual's relationship satisfaction over time such that as exposure to daily hassles increases, relationship satisfaction will decrease accordingly.
2. The pathway between exposure to daily stressors and relationship satisfaction will also be mediated by affect such that as exposure to stress increases negative affect will increase and positive affect will decrease which results in overall decreased relationship satisfaction.
3. The pathway between exposure to daily stressors and relationship satisfaction will be mediated by positive communication behavior such that as exposure to stress increases, positive communication behaviors decrease which results in decreased relationship satisfaction.
4. The mediation pathway of positive communication behavior is a unique pathway that will remain significant after controlling for the affect mediation pathway.

CHAPTER TWO

Methods

Participants

One hundred undergraduate students were recruited from Baylor University's Department of Psychology and Neuroscience subject pool for the study. Out of these 100, 80 met all inclusionary criteria and completed the required sessions. Eighty five percent of those excluded did not complete the required two entries. Ten percent of those excluded did not have at least 1 hour of face-to-face time with their partners on any entry. Finally 5% of those excluded indicated that their relationship had dissolved in the middle of the study. The sample was 67% female, 61% White (non-Hispanic), 13 % Asian, 11 % Black or African American, 11 % Hispanic or Latino, and 4 % Native American. Mean age was 19.57 years ($sd = 1.07$). Sixty two percent the sample had been dating their current partner less than 1 year, 34% had dated between 1-5 years, and 4% had dated for over 5 years. No participants in the sample identified themselves as married.

Students who identified themselves as being involved in a romantic relationship were invited to participate in a study regarding couple communication. Participants were required to be married or have been in a romantic relationship for at least 1 month to qualify for the study. This ensured that the couples had developed communication patterns so that changes within this pattern could be analyzed. Participants were also required to have face-to-face interactions with their partners for at least one hour on each of the five consecutive days of the study in order to assure validity of ratings. A question

regarding the amount of face-to-face time experienced that day was placed at the beginning of each day of the diary entry. If participants did not have the required time spent together, they were given two options. They could either discontinue and complete the questionnaire on the next day or continue the survey after noting they did not have the required amount of time together. While there was no penalty associated with either option, there was a statement encouraging participants to choose the former option in order to further data collection in the study. Similar inclusionary criterion has been successfully used in previous daily diary studies of stress in order to ensure that there is sufficient couple behavior for participants to provide ratings (Repetti, 1989). If any participants' relationship dissolved before they completed the requirements for the study, their data was not used in any statistical analyses. Students were given 3 participation credits in a psychology course at completion of study.

Procedure

Course instructors that either offer or require participation credits directed participants to the Baylor University's online SONA website, which lists research participation opportunities for the psychology and neuroscience department. Registration on the SONA website is only available to registered Baylor students who can log in using their student ID and password. The participants who signed up for the current study were then linked to an online informed consent that stated that they were participating in a study examining relationship behavior over time. This consent also listed inclusionary criteria, requirements, and potential hazards of participation. Those that agreed to participate in the study provided their names and e-mail addresses. This allowed the researcher to track participants over time.

Registered participants were then directed to an online questionnaire that required input of demographic data and took approximately 15 minutes to complete. After completion of this initial questionnaire, the researcher would then send each participant a daily e-mail with description of the diary entry process and a link to one version of the online diary entry. Five versions of the diary entry were created. Each version differed only in the order of questions presented. Each online daily diary entry took approximately 15-20 minutes to complete. Participants were asked to complete five diary entries since it allows for the possibility of missed diary entries without compromising the dataset. A minimum of two complete entries was required for the participant's data set to be considered valid. Each of the 5 daily diary entries included a question asking if the partner has had at least one hour of face-to-face interaction, a stressors measure, a positive communication measure, an affect measure, and a relationship satisfaction measure.

To increase response rate, all participants were sent a reminder email each subsequent day after first entry. These reminder e-mails included instructions on how to complete the diary entry as well as the link for the appropriate entry. If participants missed filling in a diary entry, they were sent a missed entry e-mail on the next day. The missed entry email had instructions for diary completion as well as a link for the missed diary entry. In addition, it also requested that if participants were no longer interested in participating that they respond to the e-mail indicating that they would like to withdraw. If participants did not choose either option, the missed entry e-mail was sent again until they completed a diary entry or a request for withdrawal was received. Overall, 80 participants completed at least three entries, 78 participants completed four entries, 76

participants completed five entries, 8 participants completed six entries, and 1 participant completed seven entries. The 9 participants who completed more than 5 entries filled out entries based on previous links they had received even after they received an e-mail stating that they had completed the study. Only 22 % of participants completed entries on subsequent days. However, all participants included in the study completed diary entries within 10 days of initial entry.

Measures

Daily Stressors

Daily stressors were assessed using the Brief College Student's Hassles Scale (BCSHS; Blankstein, Flett, Koledin, 1991). This scale was used for each diary entry. This measure lists 20 items that are described as minor stressors that occur frequently for college students such as "academic deadlines" or having "money for necessary expenses". Participants were asked to "Rate each item to how much of a hassle you perceived this to be today". Items are rated on a 7-point scale that ranges from "No hassle" to "Extremely persistent hassle". The BCSHS is similar to the Hassle Scale (DeLongis et al., 1982) but was developed on a college sample, appropriate for the current study. In regards to validity, the BCSHS was significantly positively correlated to significant problems with negative affect such as anxiety and loneliness and negatively correlated to optimism (Blankstein, Flett, Koledin, 1991). In the present study, using data from the first diary entry, reliability was found to be $\alpha = .89$.

Affect

Affect was assessed using the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). This scale was used for each diary entry. This scale is a 20-item measure that lists words related to positive and negative affect. Positive affect is related to perceived emotional pleasure whereas negative affect is perceived emotional displeasure. The PANAS has strong validity with measures of general distress, depression, and state anxiety (Watson, Clark, & Tellegen, 1988). The PANAS can be adjusted to measure affect within the moment, the day, the past few days, past few weeks, year, and in general. Participants in this study were asked to “Indicate the extent to which you feel this way today” on a 5-point scale ranging from “Not at all/very slightly” to “Extremely”. In the present study, using data from the first diary entry, alphas for positive affect and negative affect were found to be .88 for both subscales.

Relationship Satisfaction

Relationship satisfaction was measured using the 4-item Couples Satisfaction Index (CSI (4); Funk & Rogge, 2007). The CSI (4) was developed using item response theory analysis to identify the best items from several existing measures. This measure also shows good concurrent validity with other reliable measures of relationship satisfaction (Funk & Rogge, 2007). This scale was used for each diary entry. For the first item, participants were asked to “Indicate the degree of happiness, all things considered, of your relationship” on a 7 point scale that ranges from “Extremely unhappy” to “Perfect. The next three items asked about current feelings regarding the relationship. These items were rated on a 6-point Likert scale that ranges from “Not at

all” to “Completely”. In the present study, using data from the first diary entry, reliability for the abbreviated 4-item measure was found to be $\alpha = 0.92$.

Communication Behavior

Positive communication behavior was measured using four modified subscales of the Couple Behavior Report (CBR; Shumway & Wampler, 2002). These subscales were selected because they addressed aspects of positive communication: 1) Salutatory recognition, 2) Small talk, 3) Ego-building comments, 4) Feedback. Salutatory recognition is described as acknowledging the partner throughout the day in verbal and nonverbal ways. Small talk is described as taking time to talk about non-emotionally charged subjects that each partner wants to talk about. Ego-building comments are praise. Finally, feedback is described as mutual honesty between partners about interactions with encouragement and correction. Predictive validity was established by using the CBR to predict attachment group membership; secure, avoidant, and preoccupied (Shumway & Wampler, 2002). The CBR was successful in distinguishing those with secure attachments from the other two groups. This scale was used for each diary entry

While the original measure asks each item in a way that would look at general trends in couple behavior (i.e. When my partner and I get together after a long day, we say hello to each other), this scale was modified for use in the present study by rewording the items to pertain to the date of the diary entry (i.e. When my partner and I got together today, we said hello to each other). Furthermore, in the modified version, participants were asked “Answer whether you and your partner engaged in the following behaviors

today”. Items were be rated on a 6-point scale that ranges from “Strongly agree” to “Strongly disagree”. In the present study, the overall measure had an alpha of .83.

In order to confirm that the four subscales did in fact form a single dimension of positive communication, a one-dimensional Confirmatory Factor Analysis (CFA) model was tested using LISREL 8.80 (Jöreskog & Sörbom, 2005). Items were parceled, combined into small groups, according to subscales and therefore the factor had four indicators. The parceling method has been indicated to be appropriate in CFA when considering unidimensional factors (Little, Cunningham, Sahar, & Widaman, 2002). Errors were not allowed to correlate. The fit of the model was evaluated using a two-index strategy (Hu & Bentler, 1999) with a cut-off greater than .95 for the Comparative Fit Index (CFI) and a cut-off of less than .09 for the Standardized Root Mean Square Residual (SRMR). The unidimensional model of positive communication produced a good fit (chi square (df = 2) = 1.08, $p = 0.58$; CFI = 1.00; SRMR = 0.026) indicating that the four subscales of the CBR that were used are indeed representative of one dimension.

CHAPTER THREE

Analytic Approach

Since questions addressed by this study focus on differentiating between-person and within-person effects across time, Hierarchical Linear Modeling (HLM) was chosen as the most appropriate method of statistical analysis. Another benefit of the HLM approach is that it does not require that all participants complete the same number of daily diary entries, which allowed for maximum use of collected data. Data were analyzed using the HLM 6 software program (Raudenbush, Bryk, & Congdon, 2004). Changing raw scores to z-scores prior to analyses standardized all values. HLM models were analyzed by regressing the dependent variable on the independent variable. In essence, how well does changes in the independent variable predict changes in the dependent variable.

Analysis was conducted on two levels. While each participant in the sample had a unique set of parameters on level 1, level 2 parameters were estimates of population parameters. For example, a first level equation for positive communication behavior consisted of using a participant's daily stressor scores to predict their same day perceived relationship satisfaction. In essence, this equation answers whether knowing the number of stressors that one is exposed predicts how he or she feels about the relationship. This equation would be as follows:

$$Y_{pi} = \beta_{p0} + \beta_{p1} (\text{stressors}_{pi}) + e_{pi}$$

Y is relationship satisfaction for person "p" for assessment "i". β_{p1} is the slope for

person “p” estimated using the daily stress scores from all the assessments of person “p”. The slope indicates the extent to which within-person changes in exposure to daily stress predict corresponding within-person changes in perceived relationship satisfaction. Finally, β_{p0} is the intercept and gives the perceived relationship satisfaction score of person “p” when the within-person changes on stressors are held constant.

After one intercept and one slope are calculated for each person, these are then used as outcome variables in the second-level equations. The second level equations are as follows:

$$\beta_{p0} = \gamma_{00} + \gamma_{01} (\text{mean stressors}_p) + \mu_{0p}$$

$$\beta_{p1} = \gamma_{10}$$

The mean stressor score represents the characteristic stressor score of this person “p” and is calculated as the average of this person’s stressor scores across all assessment points. The slope (γ_{01}) is the extent to which the individual’s habitual stressor score is associated with their typical relationship satisfaction score when within-person variation is held constant. The other second level equation gives the slope (γ_{10}), which is the pooled within-person association between stressors and relationship satisfaction after removing between-person effects. Therefore, these two equations parcel out the total explained variance from within-person effects (γ_{10}) and between-person effects (γ_{01}).

Finally, mediation effects were tested at a within-person level using a two-equation procedure. This is described in Krull and MacKinnon (2001). By regressing the mediator variables on the independent variable, an estimate for the within-person effect of the independent variable on mediator is garnered “ β_a ”. Regressing the dependent variable on the independent variable and mediators produced within-person effects of

mediators on the dependent variable " β_b " and for the direct effect of the independent variable on the dependent variable. Mediation effect is then the product of β_a and β_b . Standard error for the mediated effect was calculated by Krull and MacKinnon's (2001) formula: Multiplying the square root of the sum of two squared betas by the squared standard error of the other.

CHAPTER FOUR

Results

Descriptive statistics of each measure for the first diary entry are reported in Table 1. Data were analyzed for correlations (reported in Table 2) between all variables for the first diary entry as a means to garner general descriptive data prior to the HLM analysis. The correlations indicate that all variables were correlated to the dependent variable (relationship satisfaction). As expected, exposure to daily stressors was negatively correlated to same day couple satisfaction. While mediators of this study had varying relationships with couple satisfaction, these effects fell within expected patterns. Negative affect had a negative relationship with couple satisfaction while positive affect and positive communication behavior had a positive relationship with couple satisfaction. It should be noted that positive affect did not produce significant correlations with either daily hassles or negative affect.

Table 1
Descriptive Statistics for BCSHS, PANAS, CSI, and CBR

| Measures | Mean | Standard Deviation | Range |
|-----------------|--------|--------------------|--------|
| BCSHS | 48.92 | 18.23 | 20-114 |
| PANAS: Negative | 16.08 | 6.56 | 10-35 |
| PANAS: Positive | 34.80 | 7.11 | 15-50 |
| CBR | 117.38 | 15.33 | 72-144 |
| CSI | 20.18 | 4.37 | 7-25 |

Note. BCSHS =Brief College Student Hassles Scale, PANAS =Positive Affect Negative Affect Scale, CSI= Couple Satisfaction Index, and CBR =Couple Behavior Report

Table 2
Correlations Between Variables Using First Daily Diary Entry

| Variables | Daily Stressors | Negative Affect | Positive Affect | Positive Communication | Couple Satisfaction |
|------------------------|-----------------|-----------------|-----------------|------------------------|---------------------|
| Daily Stressors | 1.00 | | | | |
| Negative Affect | .49*** | 1.00 | | | |
| Positive Affect | -.05 | -.17 | 1.00 | | |
| Positive Communication | -.35*** | -.44*** | .54*** | 1.00 | |
| Couple Satisfaction | -.27* | -.40*** | .55*** | .75*** | 1.00 |

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

Of note the correlation between positive communication behavior and couple satisfaction was not only significant but also extremely high. This is problematic as correlations in this range are often what would be expected when scales are measuring the same construct. However, even though positive communication behavior and relationship satisfaction may be highly correlated in this study, it is thought that they represent two separate constructs. Positive communication, as measured through the CBR, refers to specific couple behaviors such as providing verbal praise or salutatory recognition whereas the relationship satisfaction, as measured by the CSI, refers to a couple's cognitive evaluation about the general state of their relationship. In order to test the assumption that these scales represent two distinct factors, a unidimensional CFA model was tested using LISREL 8.80 (Jöreskog & Sörbom, 2005). If in fact these two scales were measuring the same construct, a one-factor model with both scales would prove to be a good fit. Items were parceled into five indicators. These included the four subscales of the CBR and the CSI scale as the fifth indicator. Errors were not allowed to correlate. The fit of the model was evaluated using a two-index strategy (Hu & Bentler,

1999) with a cut-off greater than .95 for the Comparative Fit Index (CFI) and a cut-off of less than .09 for the Standardized Root Mean Square Residual (SRMR). The unidimensional model using both the CBR and CSI scales mixed results (chi square (df = 5) = .49, p = 0.99; CFI = 1.00; SRMR = 0.14). While the CFI met criteria for a good fit, the SRMR was slightly over the cutoff indicating that the two scales might not be measuring identical constructs. However, an in-depth look at factor loadings of this model indicated that the CSI indicator fit better with the model than one of the CBR indicators (reported in Table 3). Furthermore, the correlational pattern between the CBR and other measures Together, these data suggests that in the study, the CBR and CSI were measuring one construct instead of two. While further analyses were conducted as planned, it should be noted that any analyses conducted on the relationship between positive communication behavior and relationship satisfaction provide minimal information due to the large correlation of those two factors.

Table 3
Confirmatory Factor Analysis Standardized Factor Loadings on CBR & CSI Scales

| Item | Factor 1 |
|----------------------------|----------|
| CSI | .82 |
| CBR_Feedback | .80 |
| CBR_Small Talk | .74 |
| CBR_Saltuatory Recognition | .71 |
| CBR_Ego Building | .66 |

In order to test Hypothesis 1, an HLM analysis was conducted in which relationship satisfaction was predicted by exposure to daily stressors. Findings from this analysis (reported in Table 4) indicated that as an individual is exposed to daily stressors (independent variable) they experience a significant within-person decrease in

relationship satisfaction. This falls in line with existing research, Boddenman's (2005) model, and Hypothesis 1 of the present study. The between-person effect was not significant.

Table 4
HLM Coefficients: Affect, Communication Behavior, and Satisfaction Predicted by Exposure to Daily Stressors

| Independent Variable | Within-person Effect | Between-person Effect |
|------------------------|----------------------|-----------------------|
| | Daily Stressors | Daily Stressors |
| Negative Affect | 0.49*** | 0.15 |
| Positive Affect | -0.003 | -0.10 |
| Positive Communication | -0.24*** | -0.11 |
| Couple Satisfaction | -0.20** | -0.22 |

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

As a first step in testing for mediation effects, exposure to daily stressors was also used to predict the mediators (β_a). As expected, HLM analyses (reported in Table 4) also indicated that increased exposure to daily stressors resulted in same day increases in negative affect and a decrease in positive communication behaviors. Noticeably, positive affect did not reach significance levels. This mirrors the correlation data mentioned previously.

Next, in order to test Hypothesis 2, two analyses were run in which each type of affect was used to predict the dependent variable (β_b). The HLM coefficients from these analyses are reported in Table 5. Both within-person effects were found to be significant while between-person effects were non-significant. The direct effect of the independent variable on the dependent variable was also analyzed. The mediated effect was calculated as the product of β_a and β_b . Findings from the tests of mediation effects (reported in Table 6) indicated that only certain mediated pathways reached levels of

significance. In regards to affect, there was an interesting difference in significance between positive affect and negative affect. While negative affect was found to be a significant pathway between stress and relationship satisfaction, positive affect was not. This finding regarding positive affect fails to support Hypothesis 2 of the current study while the finding regarding negative affect is in line with the hypothesis.

Table 5
HLM Coefficients: Couple Satisfaction Predicted by Affect & Positive Communication

| Independent Variable | Within-person Effect | Between-person Effect |
|------------------------|----------------------|-----------------------|
| | Couple Satisfaction | Couple Satisfaction |
| Negative Affect | -0.40*** | -0.01 |
| Positive Affect | 0.42*** | -0.20 |
| Positive Communication | 0.88*** | 0.008 |

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

Table 6
Tests of Mediation Between Stress and Relationship Satisfaction

| Mediated Pathway Tested | Within-Person Effects | | Significance Test for Mediated Effect | |
|-------------------------|-----------------------|-----------------|---------------------------------------|---------|
| | Direct Effect | Mediated Effect | Standard Error | Z Score |
| Negative Affect | -0.01 | -0.20*** | .04 | -5.27 |
| Positive Affect | -0.20 | -0.001 | .03 | -0.04 |
| Positive Communication | .008 | -0.21*** | .05 | -3.90 |

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

Hypothesis 3 was tested using HLM analyses of positive communication mediation pathway. As with the affect mediation pathways, the dependent variable was predicted using positive communication (reported in Table 5). While the within-person effect was found to be significant, the between-person effect was non-significant. Findings from the tests of mediation effects (reported in Table 6) illustrate that positive

communication behavior is indeed a significant mediator between stress and relationship satisfaction. However, due to the large correlation between the CBR and CSI, this result does not truly answer the question presented in Hypothesis 3.

Continuing with the data analysis as planned, the aforementioned significance of the positive communication mediation pathway does indicate whether positive communication represents a unique pathway as posited in Hypothesis 4. An alternative explanation of this finding could be that positive communication behavior reached significance merely as a consequence of the significant negative affect pathway and not due to an influence on relationship satisfaction. In order to rule out this alternate explanation, another HLM model was run as represented in Figure 1. In this model, relationship satisfaction was predicted using positive communication, negative affect, positive affect, and stress. This model allowed testing for the significance of positive communication while controlling for mediation effects of affect. Results (reported in Figure 1 and Table 7) indicate that positive communication is still a significant mediator above and beyond the mediation effects of affect. In essence, positive communication behavior represents a unique pathway between stress and relationship satisfaction. This is in line with the model described in Figure 1, Hypothesis 4, and Bodenmann's (2005) model. However, again due to the high correlation between the CBR and CSI, this is not a true answer to the question presented in Hypothesis 4 or the model described in Figure 1. Table 8 reports the mediation effect of positive communication using the new the within-person effect of positive communication as reported in Table 7.

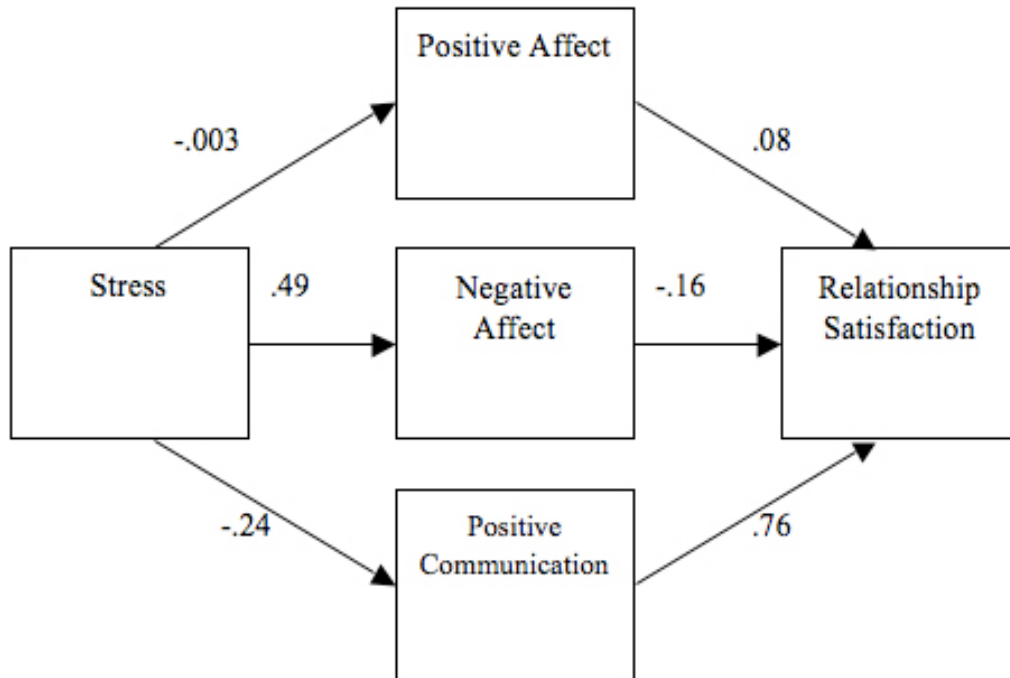


Figure 1. Mediated Pathways Between Stress and Relationship Satisfaction

Table 7
HLM Coefficients: Relationship Satisfaction Predicted Using Positive Communication, Affect, and Stress

| Within-person Effect | | |
|-----------------------|-----------------|------------------------|
| Positive Affect | Negative Affect | Positive Communication |
| .08* | -0.16*** | .76*** |
| Between-person Effect | | |
| Positive Affect | Negative Affect | Positive Communication |
| .02 | .29 | 0.06 |

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

Table 8
Tests of Mediation Between Stress and Relationship Satisfaction Revised

| Mediated Pathway Tested | Within-Person Effects | | Significance Test for Mediated Effect | |
|----------------------------|-----------------------|--------------------|--|---------|
| Mediating Variable | Direct Effect | Mediated Effect | Standard Error | Z Score |
| Negative Affect | .06 | -.08*** | .02 | -3.47 |
| Positive Affect | .06 | -.0002 | .00 | -.04 |
| Positive Communication | .06 | -.18*** | .05 | -3.81 |

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

CHAPTER FIVE

Discussion

Overview

The call from positive psychology to focus on the positive parts of human functioning has created new interest on factors that help couples thrive. In the close relationship research arena, one factor that is often representative of prospering couples is positive communication (Bienvu, 1969; Bienvu, 1975; Larson & Holman, 1994). Floyd and Voloudakis (1999) noted that positive everyday communication is “critical for the development, definition, and maintenance of personal relationships” (p. 371). Bodemann (2005) proposed that positive communication represents a unique and independent mediation pathway between stress and relationship satisfaction. The present study examined relationships between exposure to daily stressors, affect, positive communication behavior, and relationship satisfaction across time in undergraduate students in a romantic relationship. First, are stressors related to changes in relationship satisfaction? Secondly, is this pathway mediated by affect? Next, is this pathway mediated by positive communication? Finally, is the pathway of positive communication unique from the affect pathway?

Data were gathered using an online based daily diary method across several days and analyzed using HLM. Overall, stress predicts changes in satisfaction such that as stress increased relationship satisfaction decreased. This is in line with previous research in this area (Karney & Bradbury, 1995; Karney & Bradbury, 2005; Karney et al., 2005;

Story & Bradbury, 2004). The pathway between stress and relationship satisfaction was mediated by negative affect but not positive affect. The positive communication pathway was unable to be accurately analyzed as it was so highly correlated to relationship satisfaction that it was difficult to tease the two factors apart. This poses a significant difficulty in future research regarding positive communication and relationship satisfaction.

Findings

To identify the importance of positive communication in the stress to relationship satisfaction pathway, it was necessary to first identify that the pathway between stress and relationship satisfaction was indeed present. Consistent with Hypothesis 1, within-person analysis using HLM indicated that as individuals are increasingly exposed to every day stressors, relationship satisfaction decreases. This supports Boddenman's (2005) model in which stress can be detrimental to overall relationship quality. This is also in line with the work stress and relationship satisfaction research (Crouter et al., 2001; Neff & Karney, 2004; Repetti & Wood 1997; Story & Repetti, 2006; Thompson & Bolger, 1999) as well as the general trend of external factors being relevant to romantic relationship functioning (Karney & Bradbury, 1995; Karney & Bradbury, 2005; Karney et al., 2005; Story & Bradbury, 2004). Furthermore, it illustrates the importance of attending to acute *daily minor stressors*. The word *minor* specifies stresses that can occur every day such as being late for work rather than major stressors that are considered critical life events such as the death of a friend (Lazarus, 1996; Lazarus & Folkman, 1984). The word *acute* specifies the duration of the stressor. Rather than chronic issues such as role strain, the focus is on discreet stresses that occur during the day. The word

external specifies from where the stresses originate. The focus is on stress events that occur outside the relationship rather than from either the partner or within the relationship itself (Story & Bradburry, 2004). Examples of an acute minor external stressor might be if one partner has to complete a project before an upcoming deadline or if one partner has to complete several household chores. Why are these little stressors such a big deal?

While not specifically investigated in the present study, Bodenmann (2005) proposes that this specific class of stressors is important because its effects can occur outside of conscious awareness. At first glance, this concept may initially seem counterintuitive. If the effects of the stressor are out of awareness, how does it impact relationship evaluations? However, it is important to note two distinct aspects of stresses. First, stresses can have a compounding effect. Secondly, stress processes in couples seem to vary at different levels of stress (Hammond, 2000; Tesser & Beach, 1998). At mild to moderate levels of stress, relationship satisfaction can go largely unaffected. At higher levels of stress, relationship satisfaction declines. Tesser and Beach (1989) posit that at moderate levels of stress, couples have higher cognitive resources and are therefore more aware of the impact of stress on their evaluations. For example, after a moderately difficult day at work a partner's internal dialogue might be "I know I'm not happy with my partner right now because I'm stressed by what happened at work". This individual will then appropriately compensate. At higher levels of stress, cognitive resources suffer, and the couple is unable to distinguish the effects of external stress on estimates of relationship satisfaction. A partner's dialogue, after an especially difficult day at work, may be "My job is bad and my relationship is bad". Therefore, while the effects of minor external stresses may go largely unattended by the couple, the

compounding effect of these stresses makes it more likely to impact cognitive attributions regarding the relationship. Essentially, the added stress of a project deadline may lead an individual to feel less satisfied about their partner when she comes home.

The finding from Hypothesis 1 is important across a variety of levels. While not only supporting the current literature on stress and romantic relationships, this finding has implications for college students, the sample of the present study, and those working with college students. Romantic relationships are often a substantial aspect of college student life. While successful romantic relationships may improve emotional, physical, and academic health in students, romantic relationships can also be a significant cause of concern. In a 2005 national survey of college counseling center directors, they reported that 27% of those college students who had suicided had reported relationship issues as a major concern (Gallagher, 2006). A 2003 study at Kansas State University found that 56% of their clients between 1996-2001 reported relationship issues (Benton, Robertson, Tseng, Newton, & Benton, 2003). The finding from Hypothesis 1 of the present study indicates that one potential way college students may improve their daily relationship satisfaction is through stress management.

The ways in which the relationship between daily stress and couple satisfaction is mediated is further illustrative of stress processes in romantic dyads. Consistent with Hypothesis 2, negative affect was a significant mediator between daily stress and couple satisfaction. Following the previous example, when an individual has a project deadline, his or her mood tends to worsen. This aligns with research that states that core affect is related to events in a congruent manner. Understandably negative events, stressors, are related to negative affect. The worsening mood then leads to decreased satisfaction with

her romantic relationship. This provides further support that core affect drives cognitive appraisals (Russell, 2003).

Interestingly, this same pattern did not show true for positive affect. In fact, positive affect behaved unexpectedly in relation to stress throughout the study. First, it was not significantly correlated to negative affect. While Watson et al. (1988), developed the positive affect and negative affect scales to be independent of each other, they found significant correlations between the two in the low to moderate range. In the current study, positive affect was also not significantly correlated to same day stress and therefore changes in exposure to daily stressors did not predict changes in positive affect. Due to this, positive affect was not found to be a significant mediator of stress and relationship satisfaction. This is unexpected due to the finding that stress often leads to same day withdrawal behavior. If a partner is withdrawing from social activity, then positive affect, which is positively linked to social behavior, should decrease. Furthermore it was noted that affect tends to be related to events in a congruent manner (Russell, 2003). In line with this, stress, a negative event, should increase negative affect. It should also limit the access to positive material and thereby also reduce positive affect. One daily diary study by Williams and Alliger (1994) indicated stronger effects for negative affect than positive affect when considering the work to home spillover pathway. While this study did not directly look at the pathway between daily stress and relationship satisfaction, it may be an indicator that negative affect represents a stronger mediation pathway in these types of models and a partial reason why the positive mediation affect was not significant.

The hypotheses of most interest in the current study, Hypothesis 3 and 4, were unable to be accurately assessed due to the high correlation between the positive communication and relationship satisfaction scales. While the analyses that were run indicated that positive communication was a significant unique mediator between stress and couple satisfaction, the high correlation between the mediator and dependent variable in this pathway makes it difficult to draw any true conclusions from the data. Had the scales maintained their uniqueness, this data would be supportive evidence of Bodenmann's (2005) model. It would indicate that as daily stressors increased, positive communication behavior decreased, and subsequently so did relationship satisfaction. Per the running example, having a project deadline may in fact worsen an individual's mood but it also independently decreases the chances that she will say hello to her partner when she arrives home.

However, what this high correlation does indicate is the difficulty in separating positive communication measures from relationship satisfaction measures. While several factors may have been responsible for the aforementioned high correlation, such as limitations of either scale, a likely villain that seems to frequently present itself in marital research is *sentiment override*. Sentiment override was first described by Robert Weiss (1980) as a state of either positive or negative attitude towards the partner or relationship that persisted regardless of objective actions. Fincham, Bradbury, and Scott (1990) also noted that couples tend to recall events based on their current attitude. In negative sentiment override, neutral and sometimes even positive events can be seen as negative. For example Robinson and Price (1980) found that distressed couples did not see 50% of the positive events in their relationship that objective observers noted. Notarius, Benson,

Sloane, Vanzetti, Hornyak (1989) found that distressed wives rated their partner's neutral behavior as more negative than non-distressed wives. This can often be seen in couples who come to counseling in times of distress. They often have difficulty identifying positive expressions that their partner may have made towards them in the past week.

In the present study, the direction of override was positive. Thus instead of an inability to see positive, the overriding level of positivity likely made it difficult for participants to observe their relationship in a critical objective manner. It is likely that the partners were feeling positive and thereby categorized their communication behavior as good and their relationship satisfaction as good. In doing so, they cancelled out any unique variations in the individual measures. In essence, both the CBR and CSI ended up assessing a general level of positivity. The presence of positive sentiment override in this study is not surprising as Holtzworth-Munroe and Jacobson (1985) found that non-distressed couples, like the sample in the current study, tend to access relationship-enhancing attributions and cognitions. Gottman (1999) also found positive sentiment override in non-distressed couples. He proposes that it is a necessary and healthy component for successful couples and without positive sentiment override; the relationship would be vulnerable to injury.

While positive sentiment override may be important for developing healthy relationships, it also indicates that happy partners may not be the best objective reporters of their behavior. This has implications for not only research on positive communication behavior but also self report studies behavioral studies in general. One possible mechanism to overcoming sentiment override with behavioral variables is to include a direct observation piece in the study. In the current study, participants and their partners

could have been observed having a general conversation on one or two of the days that they completed a daily diary. The direct observations by researchers on these days could have been compared to the participant's reports. The greater the discrepancy, the greater the indications for sentiment override. An alternate way to attend to sentiment override in behavioral reporting is to use a measure that has shown validity between self-report and direct observation. The measure used in the current study, CBR, was created after reviewing literature on important everyday positive behaviors present in satisfied couples. There is no indication that this self-report was compared to direct observations of couple behavior. While measures that have validity between self report and direct observation are present in conflict communication literature (eg., Communications Pattern Questionnaire; Heavey, Larson, Christenson, & Zumtobel, 1996; Conflict Communication Inventory; Sanford, 2010), none exist so far for positive everyday behaviors. This indicates a need in the measurement field.

The high correlation between positive communication and relationship satisfaction may cause some to question the necessity of studying positive communication. However, it is important to note positive communication is not merely the opposite of negative communication. Instead, more current research indicates that they are two unique factors. If they were in fact two ends of a one-factor spectrum, relationship satisfaction should be achievable by removing occurrences of negative interaction. Although the lack of negative communication behaviors tends to reduce couple distress, there is little indication that the relationship becomes fulfilling afterwards (Epstein & Baucom, 2002). This provides the beginnings of understanding that adaptive behavior is not merely the absence of maladaptive behavior. Furthermore, research has

also looked at the effects of constructive adaptive problem solving behaviors during periods of conflict and found that relationship functioning is improved by both reducing negative communication and maximizing positive communication (Cox et al., 1999) which again points to positive communication behavior being its own unique factor. From this, it also becomes obvious that one cannot merely use information gathered on negative communication to make inferences on positive communication. This illustrates the need to study positive communication behaviors independently of negative communication behaviors, which currently gets the lion's share of research attention.

Limitations and Future Research

One unique aspect of this study was the sample. For convenience purposes the study was limited to undergraduate students enrolled in an introductory psychology class. While racial demographic characteristics of the sample were similar to previous studies of this type, the average age of participants was 19 years and 62% had only been dating their current partner for less than one year suggesting a rather young population in terms of chronological age and dating length. In regards to short dating length, research on young newlyweds have found that at that stage, couples are often in a time of constant change especially in regards to communication patterns (Markman, Floyd, Stanley, and Jamieson, 1984; Noller & Feeney, 1998). While the participants in the study were not newlyweds, they represent a similar scenario in terms of dating length. It is likely that they, like newlyweds, are also working at developing communication patterns. To parcel out any long-term changes in communication patterns, future studies would do well to replicate these results on a longer timeline.

The young age of the sample may also explain the presence of positive sentiment override. A study by Story, Berg, Smith, Beveridge, Henry, and Pearce (2007) found that positive sentiment override was more likely present in older (60-70 year olds) couples than middle aged couples (40-50 year olds) and proposed that older couples are biased to positive parts of the relationship. They noted that this trend also appears in younger couples and that much of the positive sentiment override literature specifically focuses on this population. Further studies in this area would benefit from expanding to a larger age range.

While the current study focused on a non-clinical community sample, the findings may also be especially applicable to clinically distressed populations. Communication skill training, which partially focuses on increasing positive communication behaviors, has also been an important part of marital therapy, especially in behavioral marital therapy (Holtzworth-Munroe & Jacobson, 1991). However the current study provides some initial support for interventions that can help distressed partners cope with external stress.

Of rising intervention interest are the dyadic coping processes to stress. Dyadic coping is described as couple based coping response to the stress signals of a partner (Revenson, Kayser, & Boddeman, 2005). In dyadic coping, the stressor becomes more of a couple problem and less of an individual problem. The question becomes “How are “we” going to cope with this stressor?” Researchers are just beginning to study the effects of dyadic coping on couple satisfaction but preliminary results seem promising. In fact, a longitudinal study on Couples Coping Enhancement Training, a short-term prevention program designed to teach communication skills, problem solving, and dyadic coping

competencies, was effective for up to two years (Bodenmann, Phiet, Shantinath, Cina, & Widmer, 2006). Another study that looked at dyadic coping in relation to metastatic breast cancer found that positive dyadic coping was mutually beneficial for the patient and the partner (Badr, Carmack, Kashy, Christofanilli, & Revenson, 2010). If a couple is better able to manage their stress response, they may find their relationships more satisfying. Further research replicating these effects in clinical populations is warranted.

Conclusion

The findings from this study indicate that it is important for individuals in romantic relationships to attend to the effects of minor daily hassles. While it may not initially seem that the hassle has much effect on the individual, increases in stress are related to declines in same day relationship satisfaction, declines in same day positive communication, and increases in negative affect. While it's not clear how these daily changes in relationship satisfaction affect the relationship over a longer time-span, this effect could be compounded over time. Whether it's by making an effort to reduce the amount of stressors or engaging in healthy coping strategies with the stress that is present, a couple has to find a way to manage the stress process.

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