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DOES THE DAY TO DAY STUFF REALLY MATTER? AN EXAMINATION OF THE EFFECT OF OPTIMISM ON DAILY PROBLEM SOLVING BEHAVIORS IN ROMANTIC RELATIONSHIPS

By

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ABSTRACT

DOES THE DAY TO DAY STUFF REALLY MATTER? AN EXAMINATION OF THE EFFECT OF OPTIMISM ON DAILY PROBLEM SOLVING BEHAVIORS IN ROMANTIC RELATIONSHIPS

By

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Previous research suggests that optimism is positively associated with satisfying romantic relationships in both cross-sectional and longitudinal analyses (Assad, Donnellan, & Conger, 2007; Srivastava, McGonigal, Richards, Butler, & Gross, 2006). However, it is unclear if this relation extends to relationship processes that play out on a daily basis. Therefore, the goal of this study is to investigate how optimism is associated with romantic relationships in a diary study. Specifically, I investigate the ability of cooperative problem solving to mediate the relation between optimism and relationship quality. I also examine if the observed relation between optimism and relationship processes persists after controlling for constructs like Neuroticism and self-esteem given that previous research has established that optimism is correlated with these personality constructs (Brissette, Scheier, & Carver, 2002; Scheier & Carver, 1985; Scheier, Carver & Bridges, 1994). Results indicate that the overall association between optimism and relationship quality was observed both cross-sectionally and on a daily basis. Additionally, cooperative problem solving was found to partially mediate the observed relation in both instances. These relations generally hold when controlling for Neuroticism or self-esteem on a daily basis.

This work is dedicated to Mom, Dad, and Matt for always believing in me; to Nate for supporting me; to Carolyn, Al, and Kelly for welcoming me into their family.

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INTRODUCTION

Imagine that your boss yells at you in front of your co-workers, your child falls out of a tree and breaks his arm, and your father suffers from a heart attack all in the same day. How do you react? Do you think these circumstances are predictive of more tribulations to come, or do you expect that things will improve? If you are an optimist, you may still expect the best in spite of these incidents, and research suggests that you might be better able to cope with these stressful events.

Indeed, previous research has found a positive association between optimism and health; however, dispositional optimism has received far less attention outside of health psychology. An initial study by Assad, Donnellan, and Conger (2007) presented evidence that optimism is linked to experiences in romantic relationships including relationship satisfaction and cooperative problem solving. A second team of researchers also found that optimism is associated with relationship satisfaction and perceptions of social support (Srivastava, McGonigal, Richards, Butler, & Gross, 2006). Although promising, these preliminary findings need to be extended; as such, the main goal of the present study is to examine the relation between optimism, cooperative problem solving, and relationship quality using a daily diary method.

Optimism, health, and coping

The personality dimension of optimism refers to the tendency to expect good things to happen in the future even if negative factors are currently present (Peterson, 2000; Scheier & Carver, 1985; Scheier, Carver, & Bridges, 2001).[1] Dispositional

[1] There are two relatively distinct approaches to conceptualizing and measuring optimism. The approach used by Scheier and Carver takes the perspective that an optimist is someone who expects beneficial things

optimism is a relatively stable individual difference construct. That is, optimism exhibits a substantial amount of rank-order stability over time and it is genetically influenced. For example, Assad et al. (2007) reported that the two-year test-retest coefficient for optimism was .69 for women and .63 for men. Likewise, Kivimäki, Vahtera, Elovainio, Helenius, Singh-Manouc, and Pentti (2005) reported a three-year retest correlation of .60. In terms of behavioral genetic evidence, Plomin, Scheier, Bergeman, Pedersen, Nesselroade, and McCleam (1992) found that optimism was partially heritable. Thus, converging evidence indicates that optimism is a personality trait, at least according to contemporary accounts of personality traits (e.g. Allport, 1937; Caspi, 1998; Funder, 1991).

In general, it appears that more optimistic people tend to be less distressed and more satisfied with life than those who are less optimistic (Scheier et al., 2001). Much of this research has used participants facing medical treatments such as coronary artery bypass graft surgery (Fitzgerald, Tennen, Affleck, & Pransky, 1993; King, Rowe, Kimble, & Zerwic, 1998; Scheier, Matthews, Owens, Magovern, Lefebvre, Abbott, & Carver, 1989), cancer treatment (Carver, Pozo, Harris, Noriega, Scheier, Robinson, Ketcham, Moffat, & Clark, 1993; Christman, 1990; Johnson, 1996), joint replacement surgery (Chamberlain, Petrie, & Azaria, 1992), as well as individuals facing AIDS

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to happen in the future whereas the Peterson and Seligman approach defines optimism as an attributional style or the ability to positively interpret past experiences (Scheier et al., 2001). The difference between the two approaches is clearly illustrated in a passage by Scheier et al., (2001):

> One approach [to assessing optimism] measures expectancies directly, asking people to indicate the extent to which they believe their future outcomes will be good or bad...The other approach ...assess expectancies by examining attributional style, the characteristic manner in which a person explains prior events (p. 190).

This paper follows the Scheier and Carver conceptualization because this is the approach most commonly used in the social and personality literature. Furthermore, the Scheier and Carver approach is a broader construct in that it also includes expectations for the future.

(Taylor, Kemeny, Aspinwall, Schneider, Rodriguez, & Herbert, 1992) and pregnancy (Carver & Gaines, 1987; Fontaine & Jones, 1997; Park, Moore, Turner, & Adler, 1997). Scheier et al. (1989) found that more optimistic coronary bypass patients reported more relief and greater life satisfaction after surgery, an example that is typical of this literature. Importantly, the positive effects of optimism seem to hold in longitudinal research that controls for initial levels of distress.

In addition to evidence that more optimistic individuals cope with health related challenges more effectively than less optimistic individuals, there is also evidence that optimists tend to have healthier lifestyles than pessimists. For example, optimists behave in ways to protect themselves from cardiac problems (Sheppard, Maroto, & Pbert, 1996), skin cancer (Friedman, Weinberg, Webb, Cooper, & Bruce, 1995), and sexually transmitted diseases (Carvajal, Garner, & Evans, 1998; Taylor et al., 1992). Moreover, optimists are less likely than pessimists to accept a terminal prognosis as inevitable and, as a result, prolong their lives (Greer, Morris, & Pettingale, 1979; Greer, Morris, Pettingale, & Haybrittle, 1990; Pettingale, Morris & Greer, 1985). Thus, there is consistent evidence linking optimism to health promoting behaviors.

Optimism has also been linked to better mental health in individuals facing stressful situations such as the transition to college or professional school. For example, studies have found that optimism is associated with decreased distress in first-year college students (Aspinwall & Taylor, 1992), decreased stress and depression in college students over the first semester (Brissette et al., 2002), decreased depression and anxiety in first-year medical students (Stewart, Betson, Lam, Marshall, Lee, & Wong, 1997), and decreased mood disturbances in first-year law students (Segerstrom, Taylor, Kemeny, &

Fahey, 1998). Moreover, optimism has been associated with more positive moods and decreased stress in middle-aged people (Räikkönen, Matthews, Flory, Owens, & Gump, 1999) and with decreased depression in menopausal women (Bromberger & Matthews, 1996). Optimism is also associated with the caregiver's well-being when controlling for patient variables (Given, Stommel, Given, Osuch, Kurtz, & Kurtz, 1993; Hooker, Monahan, Shifren, & Hutchinson, 1992; Shifren & Hooker, 1995; Tompkins, Schulz, & Rau, 1988). All told, there is an impressive amount of evidence linking optimism to well-being in samples facing psychological challenges.

Research is also beginning to identify potential mediators of this link between optimism and positive outcomes. A major focus of this work has been on coping. Coping is how an individual executes a response to stress (Carver, Scheier, & Weintraub, 1989). In general, optimists tend to cope with their problems in a more constructive fashion than pessimists. Research indicates optimists are more capable of positively reinterpreting their situations and of learning and growing from negative situations (Carver & Scheier, 2002; Maddi & Hightower, 1999; Tugade & Fredrickson, 2004). For example, optimists tend to view difficulties as challenges rather than as major threats, which may influence these individuals to view the problem with interest, or even excitement (Tugade & Fredrickson). Furthermore, optimists try to improve their situation and think more constructively about their challenges when compared to pessimists (Scheier et al., 2001).

One commonly used distinction in the coping literature is between problem-focused coping and emotion-focused coping. Problem-focused coping occurs when individuals attempt to do something constructive in response to stress whereas emotion-

focused coping occurs when the individual attempts to regulate the emotions that arise in response to the stressor (Folkman & Lazarus, 1980). In general, it appears that optimists tend to use more problem-focused coping strategies whereas pessimists use maladaptive coping strategies, such as denial or disengagement from one's goals (Brissette et al., 2002; Carver & Scheier, 2002; Carver et al., 1989; Scheier et al., 1994). As a result, optimists are more likely to overcome adversity because they use more effective, active problem-solving strategies (Scheier et al., 2001).

Likewise, optimism has also been associated with approach coping strategies (e.g. Solberg Nes & Segerstrom, 2006). The approach and avoidance distinction is an important new component to the coping literature. Approach coping refers to strategies that attempt to actively resolve or alleviate stressors or the "emotional consequences" associated with stressors, whereas avoidance coping refers to strategies that ignore the problem or issue (Solberg Nes & Segerstrom, p. 248; see e.g., Carver et al., 1989; Carver & Scheier, 2002; Chang & D'Zurilla, 1996; Maddi & Hightower, 1999; Scheier et al., 1994; Scheier et al., 2001; Segerstrom et al., 1998). In general, it appears that optimists use approach coping strategies in the context of romantic relationships, specifically by using one form of approach coping relevant to stressors in relationships: cooperative problem solving (Assad et al., 2007). Cooperative problem solving refers to working with another person (i.e. a romantic partner) to attempt to resolve the problem without criticizing or blaming the other person for the problem.

Similar positive effects of optimism on coping have been experimentally induced in the laboratory. In a study by Carver, Blaney, & Scheier (1979), participants were given an unsolvable puzzle to complete after taking an intelligence test. Some

participants were given feedback that they should be able to complete the puzzle whereas others were told that they should not be too hopeful about their ability to complete the puzzle. The results showed that participants in the induced optimism condition persisted longer at the task (Carver et al.; Scheier & Carver, 1988). Therefore, induced optimism seemed to cause individuals to persist longer at difficult tasks and have increased ability to cope with difficulties (Scheier & Carver). In sum, considerable evidence suggests that optimists tend to be more constructive and persistent than pessimists when coping with their problems and they tend to use more of an approach orientation.

The behavioral self-regulation theory

One explanation of why optimism affects behavior is provided by Scheier and Carver's behavioral self-regulation theory (1988). Their behavioral self-regulation theory offers a perspective on how an individual's goals are obtained through one's behavior. Optimism holds a prominent place in this model because this trait influences how intensely individuals will pursue their goals. Optimistic individuals will persist at attempting to achieve their goals, even when faced with obstacles. Pessimistic individuals will be less likely to persist at achieving their goals when faced with difficulty.

The first step of the behavioral self-regulation theory requires the individual to hold a particular goal for a given situation. If individuals recognize how a behavior operated on a similar situation in the past, they may learn to apply the behavior to current situations (Scheier, & Carver, 1988). For example, when a teacher hands out the course syllabus, the student learns that there will be an exam in a few weeks (situation). Upon this realization, the student recognizes that she must achieve certain goals in the process

of doing well on the exam (i.e. going to class, doing homework, studying for the test). In order to fulfill these goals, the student recalls what worked or did not work in the past. For instance, when starting to study for the test, the student recalls that some methods (like joining a study group) may have been more successful in the past than other tactics (like studying in front of the TV).

The way in which Scheier and Carver (1988) suggest goals develop in this model is through the negative feedback loop. Basically, the individual uses the negative feedback loop to evaluate whether or not one's current state is equivalent to a comparison value. The mechanism behind this process is the comparator, which is constantly assessing whether or not the individual is acting in a way to meet one's goals (Scheier & Carver). As with the previous example, the student may recognize after her first study session that she did not recall a lot of the information. By using her comparator, the student recognizes that this does not match what she previously defined as an acceptable outcome of knowing a lot of information for the test (comparison value). In order to remedy this outcome, the student will perform other actions to try to match her goal (i.e. by rereading the chapters). The student will then reassess her progress after the next study session to determine if she has obtained sufficient knowledge to meet her goal of doing well on the test.

Optimism fits into the behavioral self-regulation model because it represents a generalized positive expectancy. Accordingly, optimists are more likely to continue to pursue goals in the face of adversity whereas pessimists are more likely to disengage (either in behavioral or psychological terms) given this difference in generalized expectations for the future (Peterson, 2000, p. 47). Furthermore, because optimists have

likely used more constructive problem solving skills than pessimists in the past, an optimist can draw on a larger repertoire of behaviors to approach the situation when his or her current state is not equal to the comparison value. This larger problem solving repertoire allows the discrepancy between the comparison value and the current state to be more quickly and successfully resolved by optimists than by pessimists.

Optimism and romantic relationships

Although previous research has linked optimism to health, the apparent benefits of optimism may also extend to social outcomes. This possibility was illustrated in a study by Brissette et al. (2002) in which a college sample reported on their friendship networks and personality variables at both the beginning and end of their first semester at college. Optimists in this sample were shown to have larger and more developed friendship networks than pessimists. Additionally, Brissette et al. also found that optimists reported larger increases in social support received over the semester. These higher quality social networks appeared to buffer against stress and depression. Although Brissette et al. examined the association between optimism and general social networks, their study suggests a link between optimism and social relationships. The current study will extend this line of research to examine one very important social relationship: the romantic relationship.

Indeed, individual differences, and by extension – optimism, are associated with the characteristics of romantic relationships (Donnellan, Assad, Robins, & Conger, 2007; Robins, Caspi, & Moffitt, 2000; Srivastava et al., 2006; Watson, Hubbard, & Wiese, 2000). Although most studies have examined broad traits like Neuroticism or Negative Emotionality (e.g. Donnellan et al.; Robins et al.), there are hints that dimensions of

personality related to optimism may affect relationships. One example was conducted by Murray, Holmes, Griffen, Bellavia, and Rose (2001) who found that having positive perceptions about one's relationship relative to other long-term relationships predicted long-term relationship satisfaction. Furthermore, optimism also enhances both the current relationship, and perceptions of the relationship's future. For instance, Knee (1998) found relationship growth was correlated with the generally optimistic evaluation of relationship potential. Likewise, a significant association exists between relationship satisfaction and positive expectations that individuals have for their relationships (McNulty & Karney, 2002). Moreover, a study by Srivastava et al. (2006) directly investigated the relation between optimism and relationship quality. Srivastava and colleagues suggested that the optimism-relationship quality link was mediated by perceptions of social support. Basically, they suggested that optimists were more satisfied in their relationships because more optimistic people tended to perceive that their partners were more supportive.

Although these findings are suggestive, my colleagues and I have proposed a slightly different explanation (Assad et al., 2007). We suggested that optimism is directly associated with how couples handle conflicts and problems, which in turn promotes relationship satisfaction. Indeed, even in very satisfying relationships, some source of conflict will inevitably arise. For example, Conger, Reuter, and Elder (1999) found that economic hardships at an earlier time were later associated with emotional and marital distress. One reason why outside stressors may take a toll on the relationship is because the individuals in the dyad may not cope with these problems effectively, which would in turn lead to a decrease in relationship satisfaction. Because previous research has found

that optimists tend to cope with their problems more cooperatively and constructively than pessimists (i.e. Carver & Scheier, 2002; Maddi & Hightower, 1999; Tugade & Fredrickson, 2004), it follows that optimists would also adopt a similar approach to difficulties within their relationships. In support of this proposition, my colleagues and I found that optimism was significantly linked to cooperative problem solving and to relationship quality in a longitudinal study. Furthermore, cooperative problem solving was shown to act as a substantial mediator of the association between optimism and relationship quality (Assad et al., 2007). However, this study only assessed cooperative problem solving, optimism, and relationship quality at two different points in a two-year period. It is not clear if these associations will play out on a daily basis. Moreover, it remains to be seen if the patterns will replicate in a more specific population in which couples experience similar levels of stress. Both of these issues will be addressed in the current study.

The current study

Previous research in the area has demonstrated that optimism and problem-solving are related, as are optimism and romantic relationship outcomes. Furthermore, in long-term relationships, problem solving has been found to mediate the relation between optimism and relationship quality. However, there has been no research on the effects of problem solving acting as a mediator on a daily basis. Thus, the main purpose of this study is to extend the Assad et al. (2007) findings using a diary study to assess the daily problem solving behaviors of both partners. There are two notable strengths of this design. First, data were collected from both partners. One reason for using this method is that the study of relationships should include the perspectives of both partners and their

interactions (see Cooper & Sheldon, 2002). This is an important design feature considering that Cooper and Sheldon reported that nearly 40% of the studies linking personality traits to relationships acquired data from just one member of the dyad.

Second, insight into the day-to-day functioning of the couple was obtained using a diary method. Diary studies are important because they allow for the assessment of experiences without being influenced by biases associated with long-term recall (Cimbolic Gunthert, Cohen, & Armeli, 1999; Huston, 2000). Additionally, diary studies permit the study of within couple processes (Bolger, Davis, & Rafaili, 2003). Furthermore, diaries can be used for several different analyses, including obtaining person-level information, observing longitudinal changes, and comparing individual differences (Bolger et al.; Harris, Daniels, & Briner, 2003).

Specific aims. Aim 1: *Replicate and extend previous findings showing a relation between optimism and aspects of romantic relationships.* The first aim is to extend the findings of the Assad et al. (2007) study to a daily assessment context as opposed to a panel study. Although previous research has found that optimism is linked to problem-solving behaviors in general (e.g. Assad et al., 2007; Conger et al., 1999), it is unclear if *daily* problem solving behavior is linked to optimism.

Hypothesis 1a: Optimism will be significantly related to relationship quality.

Hypothesis 1b: Optimism will be significantly related to cooperative problem solving.

Hypothesis 1c: Cooperative problem solving will be significantly related to relationship quality.

Hypothesis 1d: Cooperative problem solving will mediate the relation between optimism and relationship quality.

Aim 2: *To examine the ability of optimism to predict relationship quality when controlling for Neuroticism or self-esteem.* The second aim is to determine if there is an independent relation between optimism and relationship quality when controlling for Neuroticism or self-esteem. It might be important to control for these variables for two reasons. First, optimism has been thought to overlap with some aspects of Neuroticism and self-esteem (Brissette et al., 2002; Scheier & Carver, 1985; Scheier et al., 1994). Neuroticism, or having persistent negative thoughts and emotions, is a broad trait that includes many different facets, and one might be a lack of optimism. Indeed, Scheier, Carver, and Bridges (1994) found that the correlation between optimism and Neuroticism was statistically significant ($r(1692) = -.50$; $p < .001$; see Table 1, p. 1066).

Second, previous research has found a relation between relationship quality and both Neuroticism and self-esteem (e.g. Karney & Bradbury, 1997; Kelly & Conley, 1987; Murray et al., 2001; Murray, Bellavia, Rose, & Griffin, 2003). For example, Kelly and Conley found that highly neurotic individuals were more likely to get divorced than others. Likewise, Karney and Bradbury found that partners' Neuroticism scores were significantly negatively correlated with relationship satisfaction. Additionally, if an individual has low self-esteem, the individual will experience relationship instability and will see their partners more negatively (Murray et al., 2001). Likewise, individuals low in self-esteem believe their partners think worse of them than they actually do and look for evidence to support this opinion (Murray et al., 2003). Thus, it seems prudent to investigate whether or not optimism has associations with relationships that are

independent of Neuroticism or self-esteem. However, I believe optimism effects are likely to hold even when controlling for these variables because the tendency to have a positive outlook for the future is not the central component of self-esteem. Moreover, this perhaps "fundamental" feature of optimism is only a narrow part of the broad trait of Neuroticism. This tendency is what I believe is driving the relation between optimism, problem-solving and relationship quality.

Hypothesis 2a: Optimism will still be significantly related to relationship quality even controlling for Neuroticism or self-esteem.

Hypothesis 2b: Cooperative problem solving will continue to act as a mediator in the optimism-relationship quality relation even controlling for Neuroticism or self-esteem.

METHOD

Sample

One hundred and fourteen couples were recruited from the graduate and professional schools at Michigan State University so that at least one member of each couple was a student. In order to participate, couples had to have been in a romantic relationship and living together for at least 6 months to ensure that the participants were in committed relationships. All couples were paid 60 dollars for their involvement with the study (30 dollars each).

Of these 114 couples, 109 couples were heterosexual (Age: *M* men = 28.89, *SD* = 5.42; *M* women = 27.50, *SD* = 4.13) and 5 were lesbian couples (Age: *M* women = 31.25, *SD* = 4.27). Because the number of lesbian couples was relatively small, data from these couples were omitted from the analyses. One other couple had to be excluded from all analyses because the male partner kept venturing into the room in which his partner was seated in order to try to interpret questions for her[2]. Additionally, one couple had to be excluded from all analyses involving the daily assessments and the final assessment because both partners only completed the initial assessment. An additional couple was excluded from all analyses because of a computer malfunction during the initial assessment that did not allow the male partner's data to be recorded. The final sample of total usable data for both the initial and daily assessments came to 106 couples. Of these couples, 30 were dating, 12 were engaged, and 64 were married. Of the 106 couples used for analysis, both members from 89 couples completed the final assessment (an 84%

[2] Considerable effort was made to keep partners separated. Participants were told that if they had questions to ask the experimenter and under no circumstance should they ask their partner for help. However, this couple had a hard time speaking English, so they may not have understood these instructions.

retention rate). The race/ethnicity of the male participants in this sample was 66.0% European American/White, 9.3% Native Asian[3], 10.4% Asian American/Pacific Islander, 4.7% Latino, 5.7% African American/Black, and 3.9% Other. The race/ethnicity of the female participants in this sample was 67.0% European American/White, 10.3% Native Asian, 9.4% Asian American/Pacific Islander, 7.5% Latina, 3.8% African American/Black, and 2.0% Other.

I conducted a brief follow-up approximately 6 months after participants had completed the final assessment in order to determine if the couple was still intact. Participants were contacted via email. If only one member of the couple responded, this response was coded for both members of the couple. If neither member of the couple responded, an email was sent to both participants 2 weeks after the initial contact. All in all, I collected follow-up data from 104 couples. Although most of the contacted couples remained intact, 2 had dissolved within this 6 month period. Because so few of the couples dissolved, this factor will not be used for analysis.

Procedure

Before beginning the diary portion of the study, participants came into the laboratory to complete the initial baseline measures and to learn about the daily diary component of the study. Previous work has stressed the importance of training participants on how to complete the diary during this initial laboratory session (see Bolger et al., 2003; Murray et al., 2003) and this advice was followed. Participants came into the lab with their partners, and sessions included anywhere between 1 to 4 couples. Instructions were read to the group as a whole and then participants were seated at personal computers in different rooms from their partners. Before completing the

[3] Native Asian refers to individuals who were born in and/or had permanent residency in an Asian country.

baseline measures, all participants were given Access IDs and were shown how to complete the diaries online. The importance for participants to be accurate above being complete was emphasized as the most important aspect of the study and participants were told they should report as honestly as possible at the scheduled time (see Bolger et al., 2003). Participants were told it would be better to not have any data for a certain day than to have biased data that would alter the outcome of the study. The instructions for the daily diary completion read "We understand that different life-circumstances will come up, preventing you from completing the diary. In this study, accuracy is much more important than completeness, so it would be better to omit a session or an item than to fill out false information or to complete a session after the appropriate time." After discussing the diary methodology, participants completed a battery of initial questionnaires.

The diary study used a fixed-schedule interval (see Bolger et al., 2003) requiring participants to complete their diaries toward the end of the day (between 8pm and 12 midnight) for 14 days. Participants completed the diary using personal computers connected to the internet, and were told to complete the diary separately from their partners. Participants were emailed by the experimenter each day to remind them to complete the study that night (see Harris et al., 2003).

Measures

Measures were slightly different for the initial, daily, and final assessments. Each of these is discussed below.

Initial Assessments

Reliability information, means, and standard deviations for the initial and final assessment measures are presented in Table 1.

Optimism. Optimism was assessed using the 6-item Life Orientation Test-Revised (LOT-R; Scheier et al., 1994). Participants answered these items using a 5-point scale ranging from "Strongly Disagree" to "Strongly Agree" and items were coded so that they reflected greater degrees of optimism. Example items include "In uncertain times, I usually expect the best" and "If something can go wrong for me it will" (reverse scored). The 2-week test-retest reliability of the LOT-R was .82 for men and .87 for women.

The Big Five. The Big Five personality factors (Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience) were measured using the International Personality Item Pool Big Five Inventory 50-Item Version (IPIP; Goldberg, 1999). Participants rated each item on a 5-point scale ranging from "Strongly Disagree" to "Strongly Agree." Each item was coded so it reflected higher amounts of the trait being measured. Each Big Five Factor was measured using 10 items. Example items include "I feel comfortable around people" for Extraversion, "I sympathize with others feelings" for Agreeableness, "I am always prepared" for Conscientiousness, "I worry about things" for Neuroticism, and "I have a vivid imagination" for Openness to Experience.

Relationship Quality. Five items from the Quality of Marriage Index (QMI; Norton, 1983) were used to assess relationship quality. Participants rated these items on 5-point scale ranging from "Strongly Disagree" to "Strongly Agree." Example items include "We have a good relationship" and "My relationship with my partner makes me

happy." The 2-week test-retest reliability of the QMI was .74 for men and .68 for women.

Self-Esteem. Self-esteem was measured using the 10-item Rosenberg Self-Esteem Scale (Rosenberg, 1965). Items were coded so that higher numbers reflected higher self-esteem. Participants completed this measure using a 5-point scale ranging from "Strongly Disagree" to "Strongly Agree." Example items include "I feel I have a number of good qualities" and "I wish I could have more respect for myself (reverse scored)." The 2-week test-retest reliability of the Rosenberg Self-Esteem Scale was .84 for men and .82 for women.

Problem Solving. The 7-item Cooperative Problem Solving Measure (Assad et al., 2007) was used to measure perceptions of both one's own and one's partner's cooperative problem solving ability in general (i.e. this measure was completed once in regards to self and once in regards to one's partner). Participants rated each item on a 7-point scale ranging from "Always" to "Never" and items were coded so that they reflected higher amounts of cooperative problem solving. Example items include "How often do you (*does your* partner) consider your partner's (*your)* ideas about solving the problem (reverse scored)" and "How often do you (*does your partner*) blame your partner (*you*) for the problem."

Daily Diary Measures

Relationship Quality. The diary itself consisted of two modified items from the QMI (Today I am happy with my relationship; Today I am satisfied with my relationship). Each of these of questions was answered on a 7-point scale ranging from

"Very Strongly Disagree" to "Very Strongly Agree." Descriptive statistics for the daily relationship quality items are displayed in Table 2.

Problem Solving. Participants were asked 4 questions regarding whether or not that had talked about a problem with their partner in the last 24 hours. These questions included "Did you attempt to solve a problem with your partner today," answered with either a "Yes" or a "No"; "Do you feel that the problem was resolved?" answered with either a "Not Applicable," "No," "Somewhat," or "Yes;" "If the problem was resolved (you marked yes for question 2), were you satisfied with the outcome?" answered with "Not Applicable," "No," "Somewhat," or "Yes," and, if participants had discussed a problem, to describe the problem in the provided space.

Participants were then told to think about the problem they had described in the preceding section when answering the subsequent problem solving questions. If participants had not discussed a problem that day, they were told to think about a daily hassle they had discussed[4]. Participants then indicated what they would be thinking about when answering the problem solving questions using the following choices: "I did not discuss a problem or a hassle with my partner today," "A relationship problem," "My own personal problem," "My partner's personal problem," "A problem that affects both of us but NOT a relationship problem," or "A daily hassle." Participants then thought about this situation when answering the Cooperative Problem Solving Measure for both themselves and their partners. The 7-items and the scale used were the same used for the

[4] For both the initial and daily assessments, participants indicated the extent to which they had experienced daily hassles using the 60-item assessment from the Kanner, Coyne, Schaefer, & Lazarus (1981) study for the initial assessment and a 28-item measure incorporating items from Kanner et al. as well as items from the Bolger, DeLongis, Kessler, & Schilling (1989) study for the daily assessments. Therefore, participants were familiar with what exactly was meant by such daily hassles. These data were not analyzed as a part of my thesis.

initial cooperative problem solving measure. Descriptive statistics for the daily cooperative problem solving measure are reported in Table 3.

Final Assessments

Several of the measures used for the initial assessment were used for the final assessment including the LOT-R (Scheier et al., 1994), the QMI (Norton, 1983), and the Rosenberg Self-Esteem Scale (Rosenberg, 1965). A few measures administered during the initial assessment were omitted from the final assessment in order to reduce the participants' burden because participants completed this survey in addition to the final daily diary on the same night. This is why the Big Five was omitted from the final assessment, particularly because previous research has found the Big Five Factors to be fairly stable in the short-term for young adults (Donnellan, Oswald, Baird, & Lucas, 2006). This reasoning is also why participants were not asked to complete the problem solving measure for problems in general for both themselves and for their partners as participants had previously completed the measure that day for the daily assessment. Descriptive statistics for the final assessment variables are reported in Table 1.

Diary Completion. Two questions were asked to assess the ease and completeness of the diary method taken from Campbell, Simpson, Boldry, and Kashy (2005). Participants responded to the question "How easy or difficult was it to complete the diaries?" on a 7-point scale ranging from "Very Easy" to "Very Difficult" and answered the question "How accurate were your diary entries?" on a 7-point scale ranging from "Very Inaccurate" to "Very Accurate." Descriptive statistics for the final assessment variables are reported in Table 4.

Participation Assessment. Finally, participants completed 7 items taken from Pennebaker, Colder, and Sharp (1990) inquiring about their experience while participating in the study. The first five questions were completed using a 7-point scale ranging from "Not at All" to "A Great Deal" and were coded so that higher numbers represented more satisfaction with participation. Example items include "Looking back on the experiment, to what degree do you feel that the experiment had a positive long-lasting effect on you?" and "Since the start of the experiment, how sad or depressed have you felt?" (reverse scored). The descriptive statistics for these five questions are reported in Table 4. Additionally, participants answered the question "If you had the chance to do it over again, would you participate in the study?" on a 5-point scale ranging from "Definitely Yes" to "Definitely No." This item was reverse scored so larger numbers reflected a greater willingness to participate in the study and descriptive statistics are reported in Table 4. Finally, participants were given the opportunity to give any other feedback or comments about the study.

OVERVIEW OF THE ANALYSES

Data from couples present special analytic challenges because of the lack of independence between partner reports (e.g., Kashy & Snyder, 1995; Kenny, Kashy, & Cook, 2006). To address this issue, the Actor-Partner Interdependence Model (APIM; e.g., Kashy & Kenny, 2000, p. 461 to 466; Kenny et al.; Olsen & Kenny, 2006) and extensions of this modeling approach were used for analyses. One advantage of the APIM is that it separately estimates actor and partner effects for dyadic data. *Actor effects* measure the influence of an individual's predictor variable on that individual's outcome variable, whereas *partner effects* capture the influence of the individual's predictor variable on her or his partner's outcome variable. For example, when examining the association between optimism and relationship quality, actor effects capture the effect of an individual's own level of optimism on her or his own satisfaction with the relationship, whereas partner effects capture the effects of the individual's level of optimism on the partner's satisfaction with the relationship. In situations where each dyad member provides self-reports of predictor and outcome variables, partner effects are more methodologically stringent because these effects are independent of shared method variance biases. That is, the same informant is not providing information on both the predictor and criterion variables.

Multilevel modeling was used to examine the effects of trait level optimism and daily problem solving tactics on daily relationship satisfaction. In this set of analyses, the individual-level variable of optimism was the upper level predictor, daily cooperative

problem solving was a lower-level predictor, and relationship satisfaction was the outcome variable.

The conventional $p < .05$ was used as the criterion for judging coefficients as statistically significant. All discussed coefficients met this criterion unless otherwise noted.

RESULTS

Descriptive statistics and gender differences

Paired t-tests and *d*-effect sizes investigating the differences between women and men on the initial and final assessment variables are reported in Table 1. The interpretation of *d*-effect sizes followed the rule of thumb discussed by McCartney & Rosenthal (2000) in which an effect size of | .2 | was considered small, | .5 | was considered moderate and | .8 | or larger was considered large. Gender differences emerged for three of the initial assessment variables. Women were found to be significantly more Agreeable and Neurotic then men as shown by the moderate effect sizes as well as by the significant t-values. Furthermore, women were more likely than men to perceive that their partners expressed more cooperative problem solving behaviors (this effect size was moderate), even though a significant difference between the genders did not emerge for perceptions of one's own cooperative problem solving behaviors. Finally, women displayed a trend for being more Extraverted than their male partners, as evidenced by a marginally significant t-value and relatively small effect size ($t(105) = 1.93$, $p = .056$, $d = .25$). Interestingly, none of the paired t-test analyses for variables measured at the final assessment indicated statistically significant gender differences.

Correlations

Correlations among the initial and final variables are presented in Tables 5 and 6 respectively. Correlations for men are displayed on the top of the diagonal and correlation values for women are below the diagonal. The value on the diagonal represents the dyad cross-partner correlation for the given variable. Partner's scores on

optimism, self-esteem, Extraversion, Agreeableness, and Openness to Experience were not significantly correlated, indicating that partners did not appear to select each other based on these variables. Interestingly, even though dyad self-esteem scores were not significantly correlated during the initial testing session, they were in the final assessment. Moreover, self-reports of problem solving, partner reports of problem solving, and overall relationship quality were positively correlated for couple members. For both genders, optimism was positively associated with self-esteem, Extraversion, and self-reports of problem solving, and negatively associated with Neuroticism. Moreover, self-reports of problem solving were associated with Agreeableness, Neuroticism (negatively), perceptions of partner problem solving, and relationship quality for both genders. Additionally, relationship quality was associated with self-esteem, Extraversion, self-reports of problem solving, and partner reports of problem solving for both genders. In the final assessment, optimism was significantly correlated with self-esteem and relationship quality and relationship quality was associated with self-esteem for men and women.

AIM 1 RESULTS

The first aim of this study was to replicate and extend the initial findings of Assad et al. (2007) showing that cooperative problem solving mediates the relation between optimism and relationship satisfaction cross-sectionally. In order to do this, I ran a series of actor-partner interdependence models for the cross-sectional analyses (for both the initial and final assessments). I then used multilevel modeling to extend the previous research by examining the ability of cooperative problem solving to mediate the aforementioned relation on a daily basis. Additionally, a separate set of analyses were conducted that incorporated gender as an independent variable in each model. Gender interactions were examined, and because there were none, gender was not considered in further analyses. In other words, the same actor and partner effects were observed for men and women.

Initial Assessment Cross-Sectional Analyses

Optimism and Relationship Quality. Actor and partner effects emerged for this analysis (Actor: $b = .18, \beta = .21, t(211) = 3.06$; Partner: $b = .14, \beta = .16, t(211) = 2.39$). These results indicate that more optimistic individuals were more satisfied with their relationships than were less optimistic individuals (i.e., there was an actor effect for optimism) and, likewise, reports of relationship quality were higher when individuals were in a romantic union with a more optimistic partner as opposed to less optimistic partner (i.e., there was a partner effect for optimism). These findings replicate observations by Assad et al. (2007) and Srivastava et al. (2006).

Optimism and Cooperative Problem Solving. Actor effects emerged for this analysis ($b = .30, \beta = .25, t(211) = 3.79$), whereas partner effects did not ($b = .08, \beta = .07,$

$t(211) = 1.04, p > .05$). The significant actor effect indicates that more optimistic individuals perceived that they were more cooperative problem solvers than did less optimistic individuals. Even though these results suggest that there is *not* an association between the individual's trait level optimism and her or his partner's general cooperative problem solving, partner effects will still be displayed in the full model (see Figure 1) and discussed in the text for completeness. However, it should be noted that traditionally, mediation should not be tested if there is no relation between the initial independent variable and potential mediator (see Baron & Kenny, 1986).

Cooperative Problem Solving and Relationship Quality. Significant actor and partner effects emerged for this analysis (Actor: $b = .23, \beta = .31, t(211) = 4.78$; Partner: $b = .12, \beta = .16, t(211) = 2.46$). The significant actor effect indicates that people who reported that they were more cooperative problem solvers were more satisfied in their relationships, and the significant partner effect indicates that individuals whose partners were more cooperative problem solvers also reported higher relationship satisfaction.

Full Process Model. The last model tested the full hypothesized process model linking optimism to relationship quality via self-reports of cooperative problem solving. The results for the full initial process model are reported in Figure 1. The actor effect of optimism predicting relationship quality was reduced in the full model ($b = .11, \beta = .13, t(211) = 1.91, p = .058$) compared to the unmediated relation between optimism and relationship quality ($b = .18, \beta = .21, t(211) = 3.06$). Therefore, there was evidence of partial mediation for actor effects because, even though the observed values were marginally different from zero, they were substantially different from the unmediated model. Likewise, the partner effect of optimism for the full model ($b = .10, \beta = .11,$

$t(211) = 1.63, p > .05$) was reduced when compared to the parameters in the unmediated model ($b = .14, \beta = .16, t(211) = 2.39$). However, because there was not a significant relation between optimism and partner cooperative problem solving, there is no evidence that cooperative problem solving acts as mediator in this respect. These findings replicate those of Assad et al. (2007) showing that cooperative problem solving is a partial mediator for the relation between optimism and relationship satisfaction regarding actor effects.

Final Assessment Cross-Sectional Analyses

Parallel cross-sectional analyses were also conducted using the final optimism, final relationship quality, and day 14 problem solving variables (the day 14 assessment was used because the general measure was not taken in the final assessment and these were conducted on the same day). Results are shown in Figure 2. Results for actor and partner effects were similar to what was observed for the initial cross-sectional analyses. For the optimism-relationship quality analysis, significant actor and partner effects emerged (Actor: $b = .34, \beta = .38, t(177) = 5.58$; Partner: $b = .13, \beta = .15, t(177) = 2.14$). For the optimism-problem solving analysis, actor effects emerged ($b = .27, \beta = .20, t(120) = 2.22$), whereas partner effects did not ($b = -.11, \beta = -.08, t(120) = -.84, p > .05$). Likewise, for the problem solving-relationship quality analyses, actor effects emerged ($b = .21, \beta = .40, t(102) = 4.11$), whereas partner effects did not ($b = .03, \beta = .05, t(102) = .52, p > .05$). The unstandardized actor effects of optimism predicting relationship quality were slightly reduced in the full model ($b = .27, \beta = .37, t(101) = 4.29$) compared to the unmediated relation between optimism and relationship quality ($b = .34, \beta = .38, t(177) = 5.58$). The partner effect of the full model was not reduced compared to the

initial model (Initial: $b = .13, \beta = .15$; Full: $b = .13, \beta = .18, t(101) = 2.14$), and is only mentioned for completeness as mediation should not be tested since there was not an established relation between the variables (Baron & Kenny, 1986). It is possible that partner effects were not observed in either the initial or final assessments due to low power as the number of couples was 106 in the initial assessment and 89 in the final assessment. Because Assad et al. (2007) observed partner effects using a larger sample (over 300 couples), partner effects may have been observed had more data been collected. Moreover, there may be complications with this analysis because the cooperative problem solving measure in the initial analysis was an overall measure of problem solving whereas the measure used in the final assessment specifically asked about cooperative problem solving for that day. Fewer people completed the problem solving measure in the final assessment, perhaps because it related to a specific problem. On the other hand, all participants who had completed the initial assessment had completed the cooperative problem solving measure in regards to general problem solving.

Daily Multilevel Analyses

Although there was evidence that cooperative problem solving mediated the relation between optimism and relationship quality cross-sectionally, it is possible that day-to-day reports may provide different conclusions. Therefore, multilevel modeling was used to examine if the daily relation between optimism and relationship quality was similar to or different from the cross-sectional analysis.

A multilevel model treating actor and partner optimism as upper-level predictors and daily relationship quality as the outcome variable while controlling for relationship

quality experienced the previous day yielded significant actor but not partner effects (Actor: $b = .29, \beta = .11, t(112.38) = 3.89$; Partner: $b = .07, \beta = .03, t(111.85) = .92, p > .05$). These results suggest that there is an association between the individual's trait level optimism and the individual's daily relationship satisfaction, but there is no evidence of an association between the individual's trait level optimism and her or his partner's daily relationship satisfaction. Partner effects will still be displayed in the full model (see Figure 3) and discussed in the text for completeness, although it should be noted that traditionally, mediation should not be tested if there is no relation between the initial independent and dependent variables (see Baron & Kenny, 1986).

Next, I tested the multilevel model treating actor and partner optimism as the upper-level predictors and daily cooperative problem solving as the outcome variable while controlling for relationship quality experienced the previous day. The results indicate that more optimistic people tended to perceive that they engaged in more cooperative problem solving each day ($b = .26, \beta = .18, t(117.36) = 3.76$), but there was no evidence that one's partner's optimism affected how the original individual perceived her or his cooperative problem solving each day ($b = .07, \beta = .05, t(120.28) = 1.06, p > .05$.

The next multilevel model examined the relation between daily cooperative problem solving and daily relationship quality while controlling for relationship quality experienced the previous day (see Figure 3). The results suggest that an individual's own daily cooperative problem solving is associated with his or her relationship satisfaction that day ($b = .34, \beta = .19, t(890.96) = 6.60$) and that partner's problem solving is also related to relationship satisfaction ($b = .14, \beta = .08, t(891.02) = 2.72$). Finally, the full

model was assessed. The actor effect in the full model ($b = .23, \beta = .09, t(122.06) = 2.79$) was reduced from the original estimate ($b = .29, \beta = .11, t(112.38) = 3.89$). Gender did not moderate these effects. Furthermore, although there was no evidence for mediation regarding partner effects, there did appear to be a relation between daily partner cooperative problem solving and one's own daily relationship quality.

Summary of Aim 1 Results

The results of Aim 1 generally supported the hypotheses. In addition to the predicted associations between the variables of optimism, cooperative problem solving and relationship quality being observed, cooperative problem solving was shown to act as a mediator between optimism and relationship quality both cross-sectionally and on a daily basis for actor effects, although this was not observed regarding partner effects.

AIM 2 RESULTS

Because previous research has illustrated that optimism overlaps with certain aspects of both Neuroticism and self-esteem (Brissette et al., 2002; Scheier & Carver, 1985; Scheier et al., 1994), it is important to control for these variables in the current study. Indeed, optimism was significantly correlated with Neuroticism and with self-esteem in the present investigation. Moreover, relationship quality was related to self-esteem whereas this effect was not detectable for Neuroticism (see Tables 5 and 6).

For the APIM analyses, whenever optimism served as the predictor variable in the regression equation, actor and partner Neuroticism or self-esteem were entered into the model. Once again, all values are statistically significant unless otherwise noted. Additionally, follow-up analyses were conducted incorporating gender into the model. Similarly to Aim 1, no interactions with gender emerged in the initial analyses. Therefore, gender will not be discussed. As a result, the same actor and partner effects were observed for men and women.

Initial Assessment Cross-Sectional Analyses Controlling for Neuroticism

Optimism and Relationship Quality. When controlling for Neuroticism, the actor effects for optimism were statistically significant ($b = .17, \beta = .19, t(211) = 2.38$), whereas the partner effects for optimism were not ($b = .10, \beta = .11, t(211) = 1.37, p > .05$). These factors indicate that the actor results from Aim 1 held even controlling for Neuroticism. Moreover, neither actor nor partner effects for Neuroticism emerged (Actor: $b = -.04, \beta = -.05, t(211) = -.66, p > .05$; Partner: $b = -.08, \beta = -.11, t(211) = -1.37, p > .05$), indicating that when controlling for optimism, Neuroticism is not related to

relationship quality. In short, there appears to be a unique actor effect between optimism and relationship satisfaction beyond Neuroticism.

Optimism and Cooperative Problem Solving. When controlling for Neuroticism, actor effects for optimism emerged ($b = .18, \beta = .16, t(211) = 2.02$) although partner effects did not ($b = .01, \beta = .01, t(211) = .09, p > .05$). The significant actor effect indicates that more optimistic individuals perceived that they were more cooperative problem solvers than did less optimistic individuals, just as was observed in Aim 1. Moreover, both actor and partner effects for Neuroticism emerged (Actor: $b = -.21, \beta = -.22, t(211) = -2.70$; Partner: $b = -.15, \beta = -.16, t(211) = -1.94, p = .053$). This indicates that one's own Neuroticism is negatively related to his or her own cooperative problem solving. Interestingly, there is trend for a one's own trait level Neuroticism to negatively influence cooperative problem solving in one's partner.

Full Process Model. The last model tested the full hypothesized process model linking optimism to relationship quality via self-reports of cooperative problem solving after controlling for Neuroticism. The actor effects of optimism predicting relationship quality were reduced in the full model ($b = .13, \beta = .14, t(211) = 1.89, p = .06$) compared to the unmediated relation between optimism and relationship quality ($b = .17, \beta = .19, t(211) = 2.38$). Thus, there was evidence of partial mediation for the actor effect, similar to what was observed in Aim 1. Cooperative problem solving still mediated the relation between optimism and relationship quality when incorporating Neuroticism into the model.

Initial Assessment Cross-Sectional Analyses Controlling for Self-Esteem

Optimism and Relationship Quality. When controlling for self-esteem, neither actor nor partner effects for optimism emerged (Actor: $b = .05$, $\beta = .05$, $t(211) = .67$, $p > .05$; Partner: $b = .08$, $\beta = .09$, $t(211) = 1.19$, $p > .05$). These results indicate that the association between optimism and relationship quality may be driven by those aspects of optimism that are associated with self-esteem. Specifically, this reasoning applies to actor effects because the actor effects for self-esteem in the model emerged to be statistically significant ($b = .25$, $\beta = .26$, $t(211) = 3.27$) whereas the partner effects for self-esteem did not ($b = .10$, $\beta = .11$, $t(211) = 1.32$, $p > .05$) when controlling for optimism.

Optimism and Cooperative Problem Solving. When controlling for self-esteem, there was a trend for actor effects of optimism to still be important to the model ($b = .18$, $\beta = .16$, $t(211) = 1.93$, $p = .055$), although this was not observed for partner effects ($b = .05$, $\beta = .04$, $t(211) = .52$ $p > .05$). Moreover, the same trends were observed for self-esteem (Actor: $b = .21$, $\beta = .17$, $t(211) = 2.06$; Partner: $b = .05$, $\beta = .04$, $t(211) = .52$, $p > .05$). The significant actor effect indicates that more optimistic individuals tended to perceive that they were more cooperative problem solvers than did less optimistic individuals when controlling for self-esteem. Moreover, the partner effect for self-esteem was not significant.

Full Process Model. The last model tested the full hypothesized process model linking optimism to relationship quality via self-reports of cooperative problem solving after controlling for self-esteem. Even though there was no evidence that optimism was related to relationship quality when controlling for self-esteem, this model was investigated in order to determine if cooperative problem solving served as a mediator in

the relation between self-esteem and relationship quality when controlling for optimism. The actor effects of self-esteem predicting relationship quality were reduced in the full model (b = .21, β = .22, $t(211)$ = 2.77) compared to the unmediated relation between self-esteem and relationship quality (b = .25, β = .26, $t(211)$ = 3.27). Thus, it appears that cooperative problem solving partially mediates the relation between self-esteem and relationship quality.

In sum, the results of the two proposed models, first controlling for Neuroticism, and then controlling for self-esteem, are interesting. These analyses suggest that actor effects associated with optimism might overlap more with actor effects for self-esteem than actor effects for Neuroticism. On the other hand, even though Neuroticism was not associated with relationship quality, it was negatively related to cooperative problem solving. To investigate this idea further, similar analyses were conducted using the final assessment variables.

Final Assessment Cross-Sectional Analyses Controlling for Neuroticism

Even though Neuroticism was only assessed during the initial testing session, initial Neuroticism was incorporated into the model with the final assessment variables because Neuroticism is a relatively stable personality trait in the short term (see Donnellan et al., 2006). Actor effects emerged for the relation between optimism and relationship quality in the final assessment, even when controlling for initial Neuroticism (Actor: b = .32, β = .36, $t(177)$ = 4.47; Partner: b = .09, β = .10, $t(177)$ = 1.26, $p > .05$), but did not emerge for Neuroticism (Actor: b = -.04, β = -.06, $t(177)$ = -.66, $p > .05$; Partner: b = -.07, β = -.10, $t(177)$ = -1.14, $p > .05$). However, actor effects did not emerge for either variable when examining cooperative problem solving (Optimism: b =

.20, β = .15, $t(120) = 1.37$; Neuroticism: b = -.12, β = -.10, $t(120)$ = -.92, $p > .05$). These findings are somewhat different from what was observed for the initial assessment and may have resulted due to reduced power as the sample size shrank from 106 to 89 couples. On the other hand, partner effects did emerge for both variables (Optimism: b = -.30, β = -.20, $t(120)$ = -1.91, p = .059; Neuroticism: b = -.29, β = -.25, $t(120)$ = -2.19). This finding is unusual in that having a more optimistic partner was associated with the individual being a less cooperative problem solver. On the other hand, the partner effects for Neuroticism replicated what was observed in the initial assessment. Furthermore, these effects may have resulted because the *day 14* cooperative solving variable was assessed instead of a general cooperative solving trait (as was assessed in the initial assessment). It may be that partner effects are more important to cooperative problem solving on a daily basis than are actor effects. Or, it could be that the observed results were flukes due to the high correlation between predictors. Because neither optimism nor Neuroticism met the requirements for mediation, the full model will not be discussed.

Final Assessment Cross-Sectional Analyses Controlling for Self-Esteem

When controlling for self-esteem, the actor effect of optimism was marginally significant (b = .16, β = .18, $t(177) = 1.80$, p = .074) and the partner effect of optimism was not significant (b = .04, β = .05, $t(177)$ = .50, $p > .05$). On the other hand, actor effects emerged for self-esteem (b = .25, β = .28, $t(177) = 2.71$) whereas partner effects did not (b = .11, β = .12, $t(177) = 1.14$, $p > .05$). This is similar to the initial assessment. Additionally, cooperative problem solving was not significantly related to optimism (Actor: b = -.01, β = -.01, $t(120)$ = -.07, $p > .05$; Partner: b = -.18, β = -.13, $t(120)$ = -.96, $p > .05$), but was associated with actor self-esteem (Actor b = .40, β = .28, $t(120) = 2.07$;

Partner: $b = .09, \beta = .06, t(120) = .48, p > .05$). Thus, there was evidence that actor self-esteem was related to relationship quality and that cooperative problem solving mediated this relation (Full Model: $b = .13, \beta = .17, t(101) = 1.36, p > .05$) at the final assessment.

Daily Multilevel Analyses Controlling for Neuroticism

A multilevel model treating actor and partner optimism and Neuroticism as the higher level variables, daily relationship quality as the dependent variable, and past day relationship quality as the control variable yielded significant actor, but not partner, effects for optimism (Actor: $b = .26, \beta = .10, t(117.63) = 3.00$; Partner: $b = .02, \beta = .01, t(116.26) = .21, p > .05$). When incorporating Neuroticism into the model, individual optimism was associated with his or her own relationship quality, although the same effect did not emerge for partners. Moreover, neither actor nor partner effects for Neuroticism emerged (Actor: $b = -.06, \beta = -.03, t(96.86) = -.83, p > .05$; Partner: $b = -.09, \beta = -.04, t(96.49) = -1.16, p > .05$). Therefore, there was no evidence that Neuroticism was independently related to daily relationship quality.

Next, I tested the multilevel model treating actor and partner optimism, and Neuroticism as the higher level variables and daily cooperative problem solving as the lower level variable. Results indicate that more optimistic people had a tendency to believe that they engaged in more cooperative problem solving each day controlling for Neuroticism ($b = .21, \beta = .14, t(120.98) = 2.68$). Additionally, partner effects emerged for Neuroticism ($b = -.23, \beta = -.20, t(119.12) = -3.18$) illustrating that partner Neuroticism was associated with the individual being a less cooperative problem solver each day.

There was evidence for partial mediation for actor effects of optimism in the full model (Full Model: $b = .16, \beta = .06, t(129.29) = 1.63, p > .05$; Initial Model: $b = .26, \beta = .10, t(117.63) = 3.00$). These, in short, are similar results obtained for the Aim 1 analyses and for the initial cross-sectional results controlling for Neuroticism. In sum, actor effects for optimism still emerged on a daily basis even when controlling for Neuroticism.

Daily Multilevel Analyses Controlling for Self-Esteem

A multilevel model treating actor and partner optimism and self-esteem as the higher level variables, daily relationship quality as the dependent variable, and past day relationship quality as the control variables yielded actor effects, but not partner effects, for optimism (Actor: $b = .22, \beta = .09, t(117.38) = 2.53$; Partner: $b = -.02, \beta = -.01, t(116.83) = -.17, p > .05$). Even when incorporating self-esteem into the model, individual optimism was associated with his or her own relationship quality, although the same effect did not emerge for partners. Furthermore, neither effect emerged for self-esteem (Actor: $b = .12, \beta = ..04, t(136.24) = 1.34, p > .05$; Partner: $b = .15, \beta = .05, t(138.47) = 1.68, p > .05$). These results are similar to what was observed under Aim 1 but are different from the initial model controlling for self-esteem.

Next, I tested the multilevel model treating actor and partner optimism and self-esteem as the higher level variables and daily cooperative problem solving as the dependent variable. The actor estimate for optimism was significant ($b = .17, \beta = .12, t(118.75) = 2.13$), indicating that more optimistic people had a tendency to believe that they engaged in more cooperative problem solving each day even controlling for self-esteem. There was evidence for partial mediation for actor effects of optimism in that the

full model (b = .17, β = .06, t(127.52) = 1.71) was reduced from the initial model (b = .22, β = .09, t(117.38) = 2.53). These, in short, are similar results obtained for the Aim 1 analyses but are contrary what was found when controlling for self-esteem cross-sectionally. Instead of self-esteem, optimism emerged as the significant variable in the daily equation.

Summary of Aim 2 Results

When controlling for Neuroticism, there was evidence that actor optimism still was related to relationship quality in all instances, and that cooperative problem solving mediated this relation cross-sectionally for the initial assessment and on a daily basis. Furthermore, Neuroticism was shown to be related to cooperative problem solving above and beyond the effects observed for optimism, particularly regarding partner effects.

When controlling for self-esteem, the relation between optimism and relationship quality was more interesting. Cross-sectionally, there was evidence that actor self-esteem was related to relationship quality, whereas this was a weaker association for optimism. On the other hand, self-esteem was not related to relationship quality on a daily basis but actor optimism was. Cooperative problem solving mediated the relation between self-esteem and relationship quality cross-sectionally, and mediated the relation between optimism and relationship quality on a daily basis.

In sum, it appears that although optimism and Neuroticism are related constructs, Neuroticism explains negative behavioral patterns beyond the scope of optimism. Additionally, optimism and self-esteem appear to be highly related constructs.

DISCUSSION

Much of the previous research about the correlates of dispositional optimism has examined life outcomes related to health and psychological well-being. However, recent work has extended the literature on optimism to romantic relationships (i.e. Assad et al., 2007; Srivastava et al. 2006). The goal of this study was to replicate and extend this past work on optimism and romantic relationships using a daily diary investigation. I proposed that the cross-sectional results of Assad et al. (2007) would extend to daily perceptions of relationship quality and cooperative problem solving assessed on a day-to-day basis. Additionally, even though past research has illustrated that optimism, as well as relationship quality, is associated with Neuroticism and self-esteem (e.g. Brissette et al., 2002; Karney & Bradbury, 1997; Kelly & Conley, 1987; Murray et al., 2001; Murray et al, 2003; Scheier & Carver, 1985; Scheier et al., 1994), I proposed that optimism would have independent effects in analyses that include controls for these traits. The findings of these analyses will now be discussed in more detail.

Cross-Sectional Analyses

The initial cross-sectional analyses indicated that dispositional optimism has both actor and partner effects when predicting relationship quality using dyadic data analysis techniques. This finding replicates the findings of past research (Assad et al., 2007; Srivastava et al. 2006). In general, it appears that optimists are more satisfied with their relationships and that optimists have more satisfied romantic partners than pessimists. In addition, the present analyses attempted to replicate the ability of cooperative problem solving to mediate the observed relation between optimism and relationship quality

observed by Assad et al. (2007). Similarly to Assad et al., actor effects were found to play an important role in this relation for both the initial and final assessments. To put it simply, the actor's optimism was related to both the actor's cooperative problem solving and the actor's relationship satisfaction; furthermore, the actor's cooperative problem solving mediated the relation between the actor's optimism and the actor's relationship satisfaction. However, partner effects for optimism on cooperative problem solving were not observed. One possible explanation for the null result observed for partner effects is that power was reduced compared to the Assad et al. (2007) study. The sample size of the current study ranged from 89 to 106 couples whereas the sample size of the Assad et al. study ranged from 337 to 351 couples. Because partner effects are smaller than actor effects in general, it is entirely possible that not enough data were collected to observe partner effects. Partner effects may have emerged if more couples had participated in the present study. Therefore, future research should attempt to replicate these findings using a larger sample size.

Daily Analyses

In addition to replicating previous research on cross-sectional analyses, actor and partner effects were examined on a daily basis in regards to optimism, relationship quality and cooperative problem solving. The individual's cooperative problem solving behavior did in fact mediate the relation between optimism and relationship quality on a daily basis when controlling for the previous day's levels of satisfaction for actor effects. However, partner effects were not observed. There are at least a couple of explanations for this finding. First, it may be that one's perceptions about one's own behavior are more important to this relation than are the actions of one's partner. Additionally, it is

possible that even if one's personal behaviors are more central when assessing one's daily behaviors, the behaviors of the partner may have a cumulative effect on relationship satisfaction. Further research should investigate the cumulative effects of partner behavior on relationship satisfaction over the long-term as 2-weeks may be an insufficient amount of time to observe these effects. Furthermore, because participants were required to have been living together for at least 6 months, it is possible that the cumulative effects of partner behavior may already have established themselves. By this point in the relationship, it is likely that the partners know each other's tendencies fairly well and that the partner behavior is not likely to fluctuate much over a 2-week period. Therefore, this effect might show itself cross-sectionally when assessing to what extent partner behaviors influence relationship satisfaction overall, as was observed by Assad et al. (2007), but may not show effects on a day-to-day basis. On the other hand, daily fluctuations in one's own behavior may be more easily observed by the participant and may have more of a direct effect on daily relationship satisfaction. Therefore, additional research should be conducted on new relationships to determine if partner effects are more important to the optimism-cooperative problem solving-and relationship satisfaction equation before partners have learned what to expect from each other when facing a problem or crisis. Individuals may be more sensitive to smaller fluctuations in their partners' behavior as they are trying to learn how their partners respond to and deal with crises.

A Different Perspective on the Process Linking Optimism to Relationship Quality

This study replicated past research illustrating that there is a relation between optimism and relationship quality cross-sectionally (i.e. Assad et al., 2007; Srivastava et

al., 2006) and expanded on this research by showing that the relation also exists on a day-to-day basis. Furthermore, these results suggest that cooperative problem solving mediates this relation both cross-sectionally and daily (consistent with Assad et al.). Although, these results are promising, further research should continue to investigate other possible factors that could explain the relation between optimism and relationship quality. For example, Srivastava and colleagues theorize that perceptions of social support from one's partner mediate the relation between optimism and relationship quality. However, I believe that cooperative problem solving is the more interesting variable. It makes sense that if an individual has a positive perception of one's partner (i.e. feels the person is supportive), she or he would likely feel satisfied in the relationship because both of these variables (perception of social support and relationship quality) reflect the individual's feelings about her or his partner. On the other hand, cooperative problem solving reflects actual behavior occurring in the relationship that could in principle be measured by outside observers. Instead of just inquiring about two different types of individual perceptions, cooperative problem solving captures actual behaviors. Moreover, these behaviors could be the targets of future interventions designed to improve relationships. Future research should continue to examine these potential mediators, as well as others, to further our understanding of the relation between individual differences and characteristics of romantic relationships.

Analyses Controlling for Neuroticism or Self-Esteem

In general, there appears to be evidence for actor effects at the cross-sectional level and on a daily basis. Because the initial results replicated past research (Assad et al., 2007), there is converging evidence that cooperative problem solving mediates the

relation between optimism and relationship quality at least in terms of cross-sectional assessments. Additionally, I wanted to investigate this relation when controlling for Neuroticism and self-esteem because previous research, as well as the present research, indicates that optimism overlaps with aspects of each construct (Brisette et al., 2002; Scheier & Carver, 1985; Scheier et al., 1994). However, optimism is not exactly the same thing as either the opposite of Neuroticism or as self-esteem. For example, some of Neuroticism's facets include hostility and emotional instability, aspects of personality which seem beyond the scope of optimism. Although these aspects of Neuroticism likely are negatively associated with cooperative problem solving, optimism is a narrower trait than Neuroticism that seems to offer a more precise explanation for the links between optimism and coping behavior. Moreover, optimism does not specifically focus on the self (like self-esteem), but assesses positive outlooks of the general future (Scheier et al., 1994). Thus, even though optimism may share some similarities with Neuroticism and self-esteem, it does appear to be a slightly different (albeit narrower) aspect of personality. Furthermore, optimism has been shown to correlate with scales that are not related to other facets of Neuroticism. For example, of five different predictor traits of Neuroticism, only optimism significantly correlated with coping behavior (Scheier et al., 1994). Furthermore, when examining the cross-sectional and daily analyses incorporating Neuroticism or self-esteem, each construct seems to explain potentially different aspects of the model.

When optimism and Neuroticism were incorporated into the same model, cooperative problem solving still mediated the relation between optimism and relationship quality both in the initial assessment and in the daily assessment.

Furthermore, Neuroticism was negatively associated with cooperative problem solving in both the cross-sectional assessment and on a daily basis, but was not associated with relationship quality. This is interesting given that past research has shown an association between Neuroticism and relationship quality (i.e. Karney & Bradbury, 1997). However, as previously mentioned, if more couples had participated in the study (thereby increasing power), effects for Neuroticism may have been observed in relation to relationship quality. Additionally, the current study provided evidence that although optimism is related to cooperative problem solving, Neuroticism may have unique value for examining negative problem solving behaviors because Neuroticism was negatively related to cooperative problem solving above and beyond the effects of optimism.

Furthermore, when optimism and self-esteem were incorporated into the analyses, a different set of effects was observed. When self-esteem and optimism were incorporated into the cross-sectional models, optimism was no longer related to relationship quality, and cooperative problem solving mediated the relation between actor self-esteem and relationship quality. However, the opposite findings emerged on a daily basis. In this case, cooperative problem solving mediated the relation between actor optimism and relationship quality, and self-esteem was no longer related to relationship quality. There are a few possible explanations for this. First, the results for the cross-sectional analyses may reflect a lack of power. It is possible that effects for optimism would have emerged in a larger sample. However, because optimism and self-esteem are very similar constructs that were shown to be highly associated in the current study (Initial assessment $r = .57$ for men and women; Final assessment $r = .74$ for men and .70 for women), these "flip-flopping" results may simply reflect multicollinearity. Indeed,

one way of conceptualizing self-esteem is having positive expectations for oneself and one's future and it would follow that this trait is strongly related to optimism. Furthermore, it would be interesting to examine if the reason why there was a difference between the cross-sectional and daily analysis is because self-esteem has a more general impact on life outcomes whereas optimism may have more of an influence on specific circumstances. Although self-esteem and optimism should be associated with general and daily well-being at a zero-order level, it may be that when both variables are incorporated into the same model, we are able to see the unique contribution for each construct more clearly. Optimism may be slightly more related to daily events than self-esteem because optimism may be more associated with positive expectations for others or for general outcomes (as well as for the self), and this could be more relevant when facing specific events. While one can easily think about the expectations one has for the self, it may take more effort or it may take a triggering event to reflect on the future outside of the self. Further research should attempt to investigate these constructs more thoroughly.

Further investigations should try to replicate these findings, but, because an actor effect for optimism still emerged in the initial and daily assessments for Neuroticism and in the daily assessment for self-esteem, it appears that the relation between optimism and relationship satisfaction is still important. Furthermore, cooperative problem solving was still shown to act as a mediator for each of the aforementioned relations. Indeed, optimism appears to be associated with relationship variables both cross-sectionally and on a day-to-day basis.

In general, even though optimism is associated with Neuroticism and self-esteem, this study provides evidence that optimism seems to have independent effects on romantic relationships, specifically on a daily basis. All in all, optimism might have beneficial qualities for the health of relationships as well as for one's own physical and mental health (i.e. Scheier et al., 1989; Scheier et al., 2001).

Cooperative Problem Solving

The present study underscores the importance of cooperative problem solving as an important predictor of relationship quality. Cooperative problem solving is a form of approach coping (as defined by Solberg Nes & Segerstrom, 2006) in that cooperative problem solving refers to the tendency for people to engage with another person, in this case a romantic partner, to attempt to solve an issue constructively without belittling the other. Engaging in such behavior is likely to benefit the couple. By focusing on the issue, not blaming or criticizing, and by listening to each other, partners are likely to feel closer and more satisfied with their relationship as a result of engaging in these tactics.

Limitations and Concluding Remarks

Several limitations, caveats, and qualifications of this study should be noted. First, these results are based on an educated sample from the Midwest region of the United States, and nearly two-thirds of the sample were European Americans. These analyses should be retested using more diverse samples. Second, it is possible recall biases are present after some distraction has occurred, although data was collected on the same day the event happened. Recall bias would be most likely if participants experienced a problem in the morning when they could not complete the diary until later that evening. Further research should examine perceptions of cooperative problem

solving immediately after facing a situation in which it is needed by using an event-contingent diary design (see Bolger et al., 2003). Additionally, future research should examine the processes linking optimism and relationships over longer intervals because the previous research has only looked at 1 and 2 year follow-ups (Assad et al., 2007; Srivastava et al., 2006). It is possible that daily behavioral patterns at a relationship's beginning may translate into dramatic differences later in life. It would be interesting to determine if being more optimistic and having more positive daily interactions with one's partner translate into drastically improved psychological well-being 10, 20, and 50 years later. Likewise, it would be interesting to investigate what happens at the beginning of a relationship when partners are first starting to learn about what to expect from their partners' behavior. It may be the case that partner effects have more of an impact on daily romantic relationship satisfaction when the partners are first starting to learn about what to expect when facing conflict in the relationship, particularly when the partners' coping styles are dissimilar.

Furthermore, future research should investigate if optimists are objectively engaging in problem solving tactics that are objectively more effective at solving problems occurring within the context of their romantic relationships. Previous research has shown that cooperative problem solving has a benefit to romantic relationships both in the short-term when reflecting on behavior and satisfaction cross-sectionally and over the long-term through longitudinal assessments (Assad et al., 2007). Additionally, the current study provides evidence that cooperative problem solving also has daily benefits for romantic couples. These findings suggest that engaging in cooperative problem solving behavior is important for the romantic relationship and future research should

investigate the importance of this type of approach coping for other types of relationships (i.e. coworkers, friends, parents, siblings). Additionally, by engaging in such behaviors instead of forms of avoidance coping, I theorize that partners may be more likely to actually solve the problem, though this idea should be investigated further.

Finally, another issue that has been stressed throughout this article is power. Future studies should attempt to replicate these findings using larger samples in order to determine if this is the reason why partner effects observed by previous researchers (Assad et al., 2007) were not replicated and why effects disappeared when controlling for self-esteem. Additionally, it may be beneficial to conduct a similar study using longer measures. If more items are added to each measure, there will likely be less measurement error and there will be increased power to detect an effect. However, it is important to note the importance of balancing this idea with the reality of diary studies. Diary studies are very demanding on participants as they typically include multiple assessments usually over the course of several days or weeks. Therefore, I attempted to keep the measures shorter in order to reduce participant burden. However, future studies may be able to address the power issue by taking fewer assessments and using longer measures.

In sum, further research should continue to address the association between optimism and relationships in order to develop a deeper understanding of the processes that link this trait to dyadic processes. The current study investigated the ability of the proposed mechanism of cooperative problem solving to explain the relation between one such individual difference, dispositional optimism, and relationship satisfaction. The analyses reveal based on both cross-sectional and daily analyses that optimism is

associated with relationship satisfaction, and that at least one mechanism for this relation is through cooperative problem solving behaviors. Further research should continue to investigate the possibility of other mediators and other personality traits in regards to relationship satisfaction in order to more fully understand why some relationships are subjectively better than others.

APPENDICES

APPENDIX A

MEASURES

The following measures were used for data collection for this study. The first set of measures was used for the baseline and ending assessments. The second set of measures was used for the daily diary portion of the study. The final set of measures was only used for the final assessment. All measures used the following scale unless otherwise stated:

Please indicate the extent to which you agree with each of the following statements.

1= Very Inaccurate
2= Moderately Inaccurate
3 = Neither Inaccurate nor Accurate
4= Moderately Accurate
5= Very Accurate

Baseline and Ending Assessments

Demographics

1. What is your gender?
   ___ Male
   ___ Female

2. What is your race/ethnic group?
   ___ African American/Black
   ___ Asian American/Pacific Islander
   ___ European American/White
   ___ Latina/Latino
   ___ Native American
   ___ Other (please explain): _____

3. What is your date of birth (Month/Day/year)? _____

4. What is your partner's gender?
   ___ Male
   ___ Female

5. What is your relationship status?
   ___ Dating
   ___ Engaged
   ___ Married

6. How long have you been in this relationship (in months)? _____ months

The International Personality Item Pool Big Five Inventory 50-Item Version
(Goldberg, 1999)

NOTE: This only appeared in the initial assessment.

Instructions: Please describe how accurately each statement describes you. Describe yourself as you generally are now, not as you wish to be in the future. Please answer these questions honestly.

1. Am the life of the party.
2. Feel little concern for others. (R)
3. Am always prepared.
4. Get stressed out easily.
5. Have a rich vocabulary.
6. Don't talk a lot. (R)
7. Am interested in people.
8. Leave my belongings around. (R)
9. Am relaxed most of the time. (R)
10. Have difficulty understanding abstract ideas. (R)
11. Feel comfortable around people.
12. Insult people. (R)
13. Pay attention to details.
14. Worry about things.
15. Have a vivid imagination.
16. Keep in the background. (R)
17. Sympathize with others' feelings.
18. Make a mess of things. (R)
19. Seldom feel blue. (R)
20. Am not interested in abstract ideas. (R)
21. Start conversations.
22. Am not interested in other people's problems. (R)
23. Get chores done right away.
24. Am easily disturbed.
25. Have excellent ideas.
26. Have little to say.(R)
27. Have a soft heart.
28. Often forget to put things back in their proper place.(R)
29. Get upset easily.
30. Do not have a good imagination.(R)
31. Talk to a lot of different people at parties.
32. Am not really interested in others.(R)
33. Like order.

34. Change my mood a lot.
35. Am quick to understand things.
36. Don't like to draw attention to myself.(R)
37. Take time out for others.
38. Shirk my duties.(R)
39. Have frequent mood swings.
40. Use difficult words.
41. Don't mind being the center of attention.
42. Feel others' emotions.
43. Follow a schedule.
44. Get irritated easily.
45. Spend time reflecting on things.
46. Am quiet around strangers.(R)
47. Make people feel at ease.
48. Am exacting in my work.
49. Often feel blue.
50. Am full of ideas.

The Life-Orientation Test (Revised)
Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994).

1. In uncertain times, I usually expect the best.
2. If something can go wrong for me it will.
3. I am always optimistic about my future.
4. I hardly ever expect things to go my way.
5. I rarely count on good things to happen to me.
6. Overall, I expect more good things to happen to me than bad.

Quality of Marriage Index
Norton, R. (1983).

How would you rate your relationship with your partner?

1. We have a good relationship
2. My relationship with my partner is very stable
3. Our relationship is strong
4. My relationship with my partner makes me happy
5. I really feel like part of a team with my partner

Rosenberg Self-Esteem Scale
Rosenberg, M. (1965).

1. I feel that I am a person of worth, at least on an equal basis with others.
2. I feel that I have a number of good qualities.
3. All in all, I am inclined to feel that I am a failure.
4. I am able to do things as well as most other people.
5. I feel I do not have much to be proud of.
6. I take a positive attitude towards myself.
7. On the whole, I am satisfied with myself.
8. I wish I could have more respect for myself.
9. I certainly feel useless at times.
10. At times I think I am no good at all.

Problem Solving Measure
Assad, K. K., Donnellan, M. B, & Conger, R. D. (2007).

Note: Participants will complete this measure for both themselves and for their partners.

Now think about what usually happens when you and your partner have a problem to solve. Think about what you do. When the two of you have a problem to solve, how often do you (does your partner)...

Always 1
Almost always 2
Fairly often 3
About half the time 4
Not too often 5
Almost Never 6
Never 7

1. Listen to your partner's ideas about how to solve the problem.
2. Have good ideas about how to solve the problem.
3. Criticize your partner or his/her ideas for solving the problem.
4. Show a real interest in helping to solve the problem.
5. Refuse, even after discussion, to work out a solution to the problem.
6. Blame your partner for the problem.
7. Consider your partner's ideas for solving the problem.
8. Insist that your partner agree with your solution to the problem.

Daily Diary Measurements

The measurements are only listed below if they are different from the scales already reported in the appendix.

Quality of Marriage Index
Norton, R. (1983)

1. Today I am happy with my relationship.
2. Today I am satisfied with my relationship.

Problem Solving

Please answer the following questions about your interactions with your partner today:

1. Did you attempt to solve a problem with your partner today? Yes No
2. Do you feel that the problem was resolved? Not Applicable No Somewhat Yes
3. If the problem was resolved (if you marked yes for question 2), were you satisfied with the outcome? Not Applicable No Somewhat Yes
4. Please briefly describe the problem below…

Measures Only Assessed in the Final Assessment

Diary Accuracy
Campbell, L., Simpson, J. A., Boldry, J., & Kashy, D. A. (2005)

1. How easy or difficult was it to complete the diaries? (1 = very easy; 7 = very difficult)
2. How accurate were your diary entries? (1 = not accurate, 7 = very accurate)

Pennebaker, J., Colder, M., & Sharp, L. (1990)

The items for this scale will be assessed using a 7-point scale ranging from 1 = "not at all" to 7 = "a great deal."

1. Looking back on the experiment, to what degree do you feel that the experiment had a positive long-lasting effect on you?
2. Looking back on the experiment, to what degree do you feel that the experiment had a negative long-lasting effect on you?
3. Since the start of the experiment, how happy have you felt?
4. Since the start of the experiment, how sad or depressed have you felt?
5. Looking back on the experiment, to what degree has this experiment been valuable or meaningful for you (not counting the monetary payment you will receive)?
6. If you had the chance to do it over again, would you participate in the study?
   Definitely yes __ Probably yes __ Don't know __ Probably no__ Definitely no _
7. Any other comments you have about the experiment will be greatly appreciated:

APPENDIX B

TABLES

Table 1. Descriptive Statistics for the Initial and Final Assessment Variables

	Men			Women			Gender Differences	
Variable	*M*	*SD*	α	*M*	*SD*	α	*t*	*d*
Individual Differences								
Initial Optimism	3.76	.65	.85	3.67	.61	.84	-1.02	-.14
Final Optimism	3.78	.64	.85	3.77	.65	.84	.13	-.02
Initial Self-Esteem	4.08	.57	.88	3.97	.60	.88	-1.47	-.19
Final Self-Esteem	3.98	.62	.90	3.95	.65	.90	.00	-.05
Extraversion	3.17	.73	.88	3.35	.71	.89	1.93	.25
Agreeableness	3.85	.48	.79	4.06	.43	.75	3.24*	.46
Conscientiousness	3.58	.63	.82	3.65	.58	.79	.74	.12
Neuroticism	2.61	.71	.88	3.13	.72	.89	4.90*	.73
Openness to Experience	3.82	.52	.80	3.73	.52	.80	-1.22	-.17
Relationship Measures								
Self-Report of Problem Solving	5.49	.65	.72	5.52	.73	.79	.50	.07
Report on Partner's Problem Solving	5.26	.87	.83	5.62	.77	.82	3.55*	.44
Initial Relationship Quality	4.46	.56	.91	4.55	.56	.92	1.49	.16
Final Relationship Quality	4.55	.55	.93	4.52	.61	.94	-.83	-.05

Note: Effect sizes and *t*-values were calculated so that positive numbers indicate the women scored higher than men. There were 105 degrees of freedom for initial assessment *t*-tests ($N = 106$). There were 88 degrees of freedom for all final assessment *t*-tests ($N = 89$). $*p < .05$.

Table 2. Descriptive Statistics for the Daily Relationship Quality Measure

	Men				Women				
Day	*M*	*SD*	B_o	B_q	*M*	*SD*	B_o	B_q	r_{mw}
1	5.52	1.69	.69*	.50	5.58	1.75	.28	.44	-.01
2	5.10	2.02	.10	.45	5.67	1.64	.42	.72*	.02
3	5.68	1.65	.55*	.54	5.39	1.79	.72*	.80*	.20
4	5.44	1.84	.66*	.12	5.47	1.71	.45	.71*	.04
5	5.35	1.84	.93*	.25	5.48	1.75	.45	.99*	.23*
6	5.60	1.71	.27	.72*	5.29	1.84	.17	.56	.26*
7	5.53	1.59	.31	.67*	5.81	1.38	.71*	.84*	.21
8	5.87	1.39	.91*	.58*	5.78	1.47	.39	.80*	.21
9	5.72	1.40	.30	.84*	5.68	1.49	.39	.62*	.28*
10	5.71	1.51	.25	.65*	5.85	1.32	.34	.50*	.17
11	5.70	1.46	.34	.79*	5.81	1.47	.77*	.83*	.41*
12	5.61	1.71	.19	.23	5.78	1.55	.76*	.87*	.19
13	5.73	1.53	.12	.34	6.14	.98	.30	.62*	.35*
14	5.63	1.63	.11	.43	5.73	1.53	.54*	.69*	.09
All	5.55	1.06	--	--	5.64	1.02	--	--	.19

Note: B_o refers to the coefficient of initial optimism in the equation predicting daily relationship quality from initial optimism. B_q refers to the coefficient of initial relationship quality in the equation predicting daily relationship quality from initial relationship quality. The average score for all days was calculated by taking the mean of the average scores for each person over the 2-week time period. r_{mw} refers to the correlation between male and female scores. The correlation for All Days was calculated by averaging the *r* to *z* transformations of the daily correlations. $*p < .05$.

Table 3. Descriptive Statistics for the Daily Cooperative Problem Solving Measure

		Men					Women					
Day	*N*	*M*	*SD*	α	B_o	B_q	*M*	*SD*	α	B_o	B_q	*r*
1	77	5.78	(.69)	.72	.14	.37*	5.76	(.95)	.86	.11	.34	.12
2	69	5.80	(.81)	.77	.32*	.30	5.83	(.97)	.86	.21	.57*	.16
3	65	5.64	(.93)	.84	.25	.21	5.87	(.97)	.82	.24	.89*	.38*
4	46	5.66	(.84)	.76	.18	.08	5.71	(.91)	.80	.31	.47*	.19
5	58	5.84	(.81)	.74	.25	.10	5.77	(1.04)	.86	.17	.83*	.20
6	52	5.68	(.96)	.84	.46*	.29	5.71	(1.14)	.91	.00	.95*	.52*
7	43	5.71	(.76)	.71	.34*	.38	5.87	(.95)	.85	.34	.92*	.33*
8	48	5.66	(.74)	.73	.30	.38*	5.79	(.94)	.80	.17	.53*	.25
9	48	5.57	(.79)	.70	.19	.09	5.92	(.90)	.80	.29	.55*	.27
10	50	5.72	(.86)	.71	.11	.36	5.83	(.91)	.80	-.07	.38	.37*
11	40	5.51	(1.12)	.89	.21	.24	5.91	(1.09)	.88	.17	.77*	.33*
12	41	5.59	(.95)	.85	.24	.27	5.83	(.92)	.79	.43*	.69*	.24
13	38	5.55	(.94)	.80	.05	-.03	5.82	(.99)	.85	.26	.62*	.43*
14	52	5.82	(.83)	.83	.11	.49*	5.77	(1.00)	.88	.35	.66*	.40*
All Days	103	5.73	(.68)	--	--	--	5.83	(.73)	--	--	--	.30*

Note: *N* refers to the number of couples used for the analyses. B_o refers to the coefficient of initial optimism in the equation predicting daily cooperative problem solving from initial optimism B_q refers to the coefficient of initial relationship quality in the equation predicting daily cooperative problem solving from initial relationship quality. The average score for All Days was calculated by taking the mean of the average scores for each person over the 2-week time period. The correlation for all days was calculated by averaging the *r* to *z* transformations of the daily correlations. $*p < .05$.

Table 4. Descriptive Statistics for the Diary Completion Measures

	Men			Women			Gender Differences	
Variable	*M*	*SD*	α	*M*	*SD*	α	*t*	*d*
Campbell et al. (2005) Measures								
Ease of Diary Completion	4.98	1.37	--	5.20	1.33	--	1.19	.16
Diary Accuracy	6.02	.95	--	5.96	.94	--	-.46	-.06
Pennebaker et al. (1990) Measures								
Average Positive Diary Experience**	4.67	.91	.64	4.51	.97	.65	-1.69	-.17
Positive Lasting Effect	3.62	1.50	--	3.52	1.50	--	-.56	-.07
Negative Lasting Effect	1.53	1.07	--	1.32	.86	--	1.56	-.21
How Happy Have You Felt?	5.28	1.03	--	5.18	1.04	--	-.99	-.10
How Sad Have You Felt?	2.21	1.15	--	2.58	1.38	--	-2.57*	.29
Felt Experiment Was Valuable	3.98	1.48	--	3.89	1.60	--	-.62	-.06
Likelihood of Participation	4.28	.76	--	4.40	.71	--	1.04	.16

Note: Effect sizes and *t*-values were calculated so that positive numbers indicate the women scored higher than men. There were 88 degrees of freedom for each *t*-test. $p < .05$. The Average Positive Diary Experience measure refers to the average of all of the Pennebaker items. **The second item from the Pennebaker scale (negative lasting effect – reverse coded) was omitted from the analyses because it made the overall scale less reliable for both men (α with item 2 = .56) and women (α with item 2 = .58). The means of this item were 6.46 (*SD* = 1.08) for men and 6.67 (*SD* = .87) for women. The stem for items 1 and 2 of the Pennebaker scale read "Looking back on the experiment, to what degree do you feel that the experiment had a .... on you." The stem for items 3 and 4 read "Since the start of the experiment, ...?" Item 5 read "Looking back on the experiment, to what degree has this experiment been valuable or meaningful for you (not counting the monetary payment you will receive)?" The last item read "If you had the chance to do it over again, would you participate in the study?"

Table 5. Correlation Matrix for the Initial (in Lab) Session Variables

	1	2	3	4	5	6	7	8	9	10
1. Optimism	***-.08***	.57*	.30*	.40*	.10	-.48*	.04	.28*	.31*	.15
2. Self-Esteem	.57*	***.13***	.27*	.16	.19*	-.42*	.33*	.10	.18	.18+
3. E	.38*	.46*	***.07***	.32*	-.09	-.16	.29*	-.04	.05	.18+
4. A	.08	.27*	.41*	***-.03***	.09	-.10	.11	.39*	.22*	.14
5. C	.07	.26*	-.05	.19*	***-.18***	.05	.13	.06	.03	.11
6. N	-.58*	-.45*	-.12	-.10	-.14	***-.20****	-.17	-.22*	-.14	-.13
7. O	.05	.31*	.28*	.15	-.06	.05	***.07***	.08	-.03	.13
8. Self-Report of Problem Solving	.23*	.41*	.23*	.22*	.07	-.33*	.15	***.17***	.63*	.33*
9. Report on Partner's Problem Solving	.11	.36*	.21*	.16	.19	-.13	.17	.54*	***.21****	.46*
10. Relationship Quality	.25*	.44*	.22*	.14	.20*	-.16	.21*	.35*	.58*	***.41****

Note: Correlations between male variable scores are above the diagonal and correlations between female scores are below the diagonal. Male and female correlations for each variable are reported on the diagonal. E = Extraversion, A = Agreeableness, C = Conscientiousness, N = Neuroticism, O = Openness. $*p < .05$.

Table 6. Correlation Matrix for the Final Session Variables

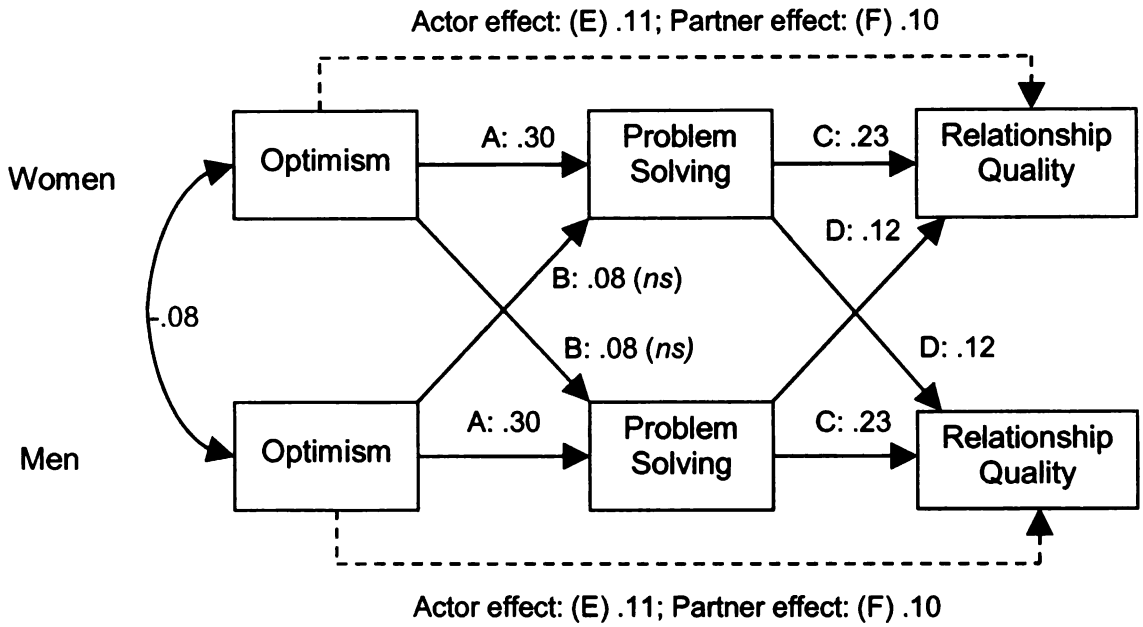
	1	2	3	4	5	6	7
1. Optimism	***.05***	.74*	.22*	.11	.11	.06	.11
2. Self-Esteem	.70*	***.21****	.32*	.11	-.01	.06	.03
3. Relationship Quality	.45*	.45*	***.46****	.25*	.15	.16	.29*
4. Ease of Diary Completion	.16	.17	.30*	***.44****	.17	.28*	.04
5. Diary Accuracy	.03	.19	.05	.27*	***-.05***	.22*	.25*
6. Positive Diary Experience[1]	.21*	.23*	.47*	.29*	.16	***.34****	.34*
7. Likelihood of Participation	.21	.17	.16	.19	.11	.34*	***.21****

Note: Correlations between male variable scores are above the diagonal and correlations between female scores are below the diagonal. Male and female correlations for each variable are reported on the diagonal. [1]The second item from the Pennebaker scale was omitted from analysis because it reduced the reliability for both males (initial $\alpha = .56$) and females (initial $\alpha = .58$) as well as for the overall sample (initial $\alpha = .57$). $^{*}p < .05$.

APPENDIX C

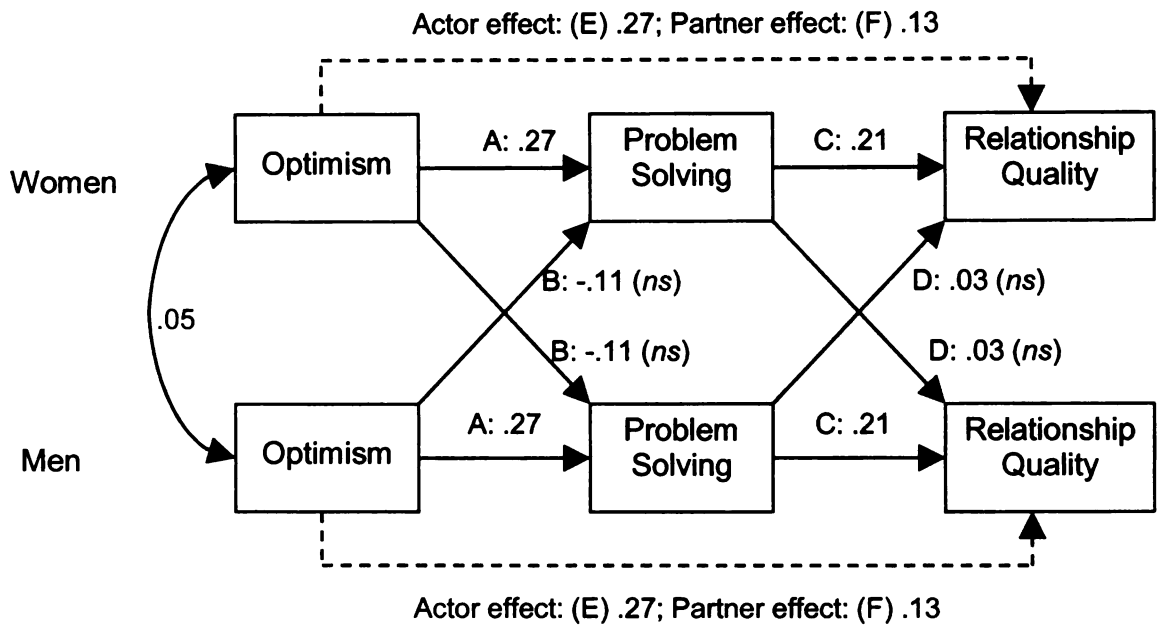
FIGURES

Figure 1. Cross-Sectional Model Linking Initial Optimism, Cooperative Problem Solving, and Relationship Quality



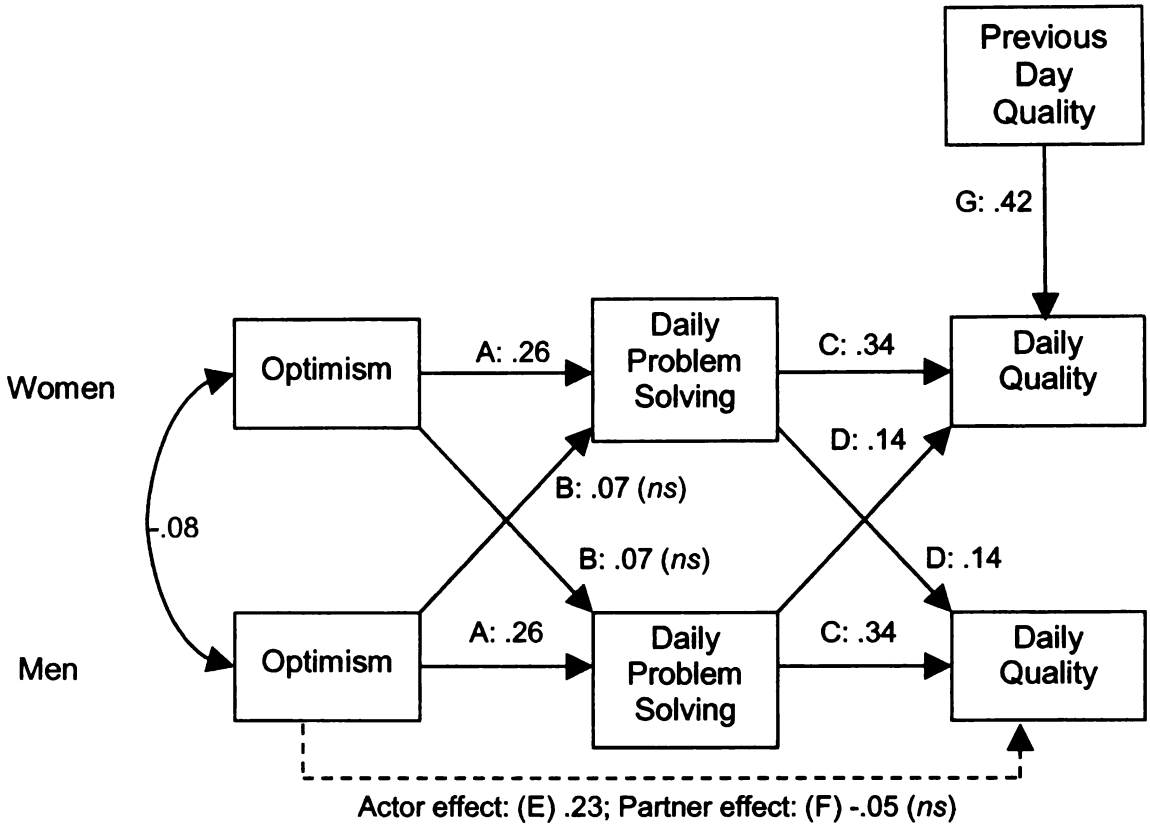
Note: R^2 for Cooperative Problem Solving = .07, R^2 for Relationship Quality = .14. Covariances between residuals for Cooperative Problem Solving and Relationship Quality are not displayed to enhance figure clarity (r = .17 and r = .41, respectively). Paths with the same letter were constrained to equality because there were no observed gender differences. All paths were statistically significant unless otherwise noted. Unstandardized path coefficients are reported. Standardized path coefficients (βs) are as follows: A = .25, B = .07, C = .31, D = .16, E = .13, F = .11.

Figure 2. Cross-Sectional Model Linking Final Optimism, Cooperative Problem Solving, and Relationship Quality



Note: R^2 for Cooperative Problem Solving = .05, R^2 for Relationship Quality = .18. Covariances between residuals for Cooperative Problem Solving and Relationship Quality are not displayed to enhance figure clarity (r = .40 and r = .46, respectively). Paths with the same letter were constrained to equality because there were no observed gender differences. All paths were statistically significant unless otherwise noted. Unstandardized path coefficients are reported. Standardized path coefficients (βs) are as follows: A = .20, B = -.08, C = .40, D = .05, E = .37, F = .18.

Figure 3. Daily Model Linking Initial Optimism, Daily Cooperative Problem Solving, and Daily Relationship Quality Controlling for Past Day Relationship Quality



Note: Covariances between residuals for Daily Cooperative Problem Solving and Daily Relationship Quality are not displayed to enhance figure clarity ($r = .30$ and $r = .19$, $p < .10$, respectively). The partner effect for previous day's relationship quality was not significant ($b = -.05$, $\beta = -.02$, $p > .05$) and is omitted from the figure for clarity. Paths with the same letter were constrained to equality. The full model path and the previous day's relationship quality were observed for both men and women, but are only displayed once in the model for clarity. All paths were statistically significant unless otherwise noted. Standardized path coefficients (βs) are as follows: A = .18, B = .05, C = .19, D = .08, E = .09, F = -.02, G = .32.

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