
Two Distinct Emotional Experiences in Romantic Relationships: Effects of Perceptions Regarding Approach of Intimacy and Avoidance of Conflict

Jean-Philippe Laurenceau
Adam B. Troy
Charles S. Carver
University of Miami

This study examined how perceived position and velocity regarding approach and avoidance in romantic relationships relate to affective experiences. The authors hypothesized that perceived progress toward intimacy would predict positive affect and that perceived movement toward conflict would predict anxious affect. Ninety-two romantic couples recorded perceived levels of, and perceived changes in, both intimacy and conflict twice daily throughout 10 consecutive days using electronic palm-top devices. Multilevel modeling demonstrated that perceived increase in intimacy related to positive affect above and beyond perceptions of intimacy, conflict, and changes in conflict, for both male and female partners. Perceived increase in conflict related to anxious affect above and beyond perceptions of conflict, intimacy, and changes in intimacy, but only among male partners. Findings support a dual-process view of these feelings in romantic relationships and suggest that increases in positive feelings in close relationships depend on enhancing intimacy rather than on decreasing conflict.

Keywords: *computerized diary methodology; approach; avoidance; intimacy; conflict; emotion*

Emotional experiences are core elements in the functioning of intimate relationships. Positive emotions predict the initiation of relationships and negative emotions predict their dissolution (Gottman, 1994, 1999). Indeed, intimate relationships represent one of the primary contexts for both the experience and the expression of emotion (Andersen & Guerrero, 1998; Berscheid, 1983). Yet how emotions play out in relationships has received relatively little attention compared to the role emotion plays in phenomena such as stress and coping.

EMOTION THEORY IN RELATIONSHIPS

Perhaps the best known theory of emotion in relationships is that of Berscheid (1983, 1991; Berscheid & Ammazalorso, 2001). Adopting the theoretical stance of Mandler (1980), Berscheid suggested that emotion in relationships results from disruption of interpersonal scripts, that is, instances in which interactions differ from an expected pattern. If the disruption facilitates progress toward a desired goal, positive emotion is experienced. If the disruption obstructs progress, negative emotion is experienced. Although the theory does not require that the goal facilitated or obstructed be one that pertains directly to the relationship, such is often the case.

Relational Incentives and Threats

What are people's goals in close relationships? One goal in relationships that has been discussed repeatedly is intimacy (McAdams, 1992; Peplau & Gordon, 1985; Reis, 1990; Reis, Senchak, & Solomon, 1985; Ryan & Deci, 2000). Intimacy is a feeling of connectedness with

Authors' Note: Preparation of this article was supported by funding from the National Institute of Mental Health (1K01MH64779) to Jean-Philippe Laurenceau. We are grateful to Blaine J. Fowers and S. T. Calvin for their insights regarding earlier versions of this article. We are also grateful to Lisa Feldman Barrett, Daniel J. Barrett, and the National Science Foundation for their role in developing the Experience Sampling Program software that was used in the present study. Correspondence concerning this article should be addressed to Jean-Philippe Laurenceau, Department of Psychology, University of Miami, Coral Gables, FL 33124-0751; e-mail: jlaurenceau@miami.edu.

PSPB, Vol. 31 No. 8, August 2005 1123-1133
DOI: 10.1177/0146167205274447

© 2005 by the Society for Personality and Social Psychology, Inc.

another person (Laurenceau, Rivera, Schaffer, & Pietromonaco, 2004), which many regard as a universal human need (Baumeister & Leary, 1995; Ryan & Deci, 2000). Each person has a level of intimacy that he or she desires (McAdams, 1992; Reis & Shaver, 1988), a level of intimacy that characterizes his or her ideal for a romantic relationship. People in romantic relationships try to maintain intimacy by self-disclosure and conveying a sense of understanding and responsiveness toward their partner (Laurenceau, Feldman Barrett, & Pietromonaco, 1998; Reis & Shaver, 1988). Indeed, just having intimacy-related goals has been linked to greater relationship satisfaction (Sanderson & Cantor, 2001; Sanderson & Evans, 2001). Most people probably do not strive consciously for intimacy at all times. Nonetheless, this goal presumably is so important that it is always active at some level in the minds of people who are in romantic relationships, thereby influencing their experiences (Fitzsimons & Bargh, 2003).¹

Not all goal values that pertain to relationships are desired conditions, however. Some are undesired conditions to avoid—threats rather than incentives. A major threat in relationships is conflict, or interpersonal pain (Simpson, Oriña, & Ickes, 2003). Guerrero and Andersen (2000) suggested that each person has a level of relationship conflict that is intolerable and that this represents a feared state to avoid.

Conflict takes several forms and has innumerable destructive effects on intimate relationships (see Booth, Crouter, & Clements, 2001). Behaviors that create conflict, such as criticism, lead to anxiety and distress (Gottman, 1994, 1999; Smith, Sanders, & Alexander, 1990); resolution of conflict decreases distress (Geist & Gilbert, 1996). Indeed, conflict is so salient a factor in relationships that it has been the main research indicator of relationship functioning (Fincham & Beach, 1999), with far less attention being devoted to the incentive of intimacy (Gable & Reis, 2001). Although conflict and (loss of) intimacy are related, these states are not simply opposite ends of a single dimension. Intimacy is an incentive; conflict is a threat.

Approaching Incentive and Avoiding Threat

The distinction between intimacy as an incentive and conflict as a threat echoes a broader distinction often made in the literatures of personality and motivation (e.g., Cacioppo, Gardner, & Berntson, 1999; Carver, Sutton, & Scheier, 2000; Davidson, 1998; Depue & Collins, 1999; Depue & Zald, 1993; Fowles, 1993; Gray, 1994a, 1994b; Watson, Wiese, Vaidya, & Tellegen, 1999). It is often argued there that there exist partially distinct aversive and appetitive motive systems that underlie two classes of behavioral and affective tendencies (Carver & White, 1994; Davidson, 1984, 1998; Gray, 1994a;

Harmon-Jones & Allen, 1997; Lang, 1995). One system is concerned with the approach of incentives, the other with the avoidance of threats.

These two systems also are believed responsible for two sorts of emotional experience (e.g., Cacioppo et al., 1999; Carver, 2001; Watson et al., 1999). When a person is progressing toward an incentive, the appetitive system is held to yield positive affects such as eagerness and excitement (Fowles, 1993; Gray, 1994a, 1994b). When a person is nearing a threat, the aversive system is held to yield anxiety (Fowles, 1993; Gable, Reis, & Elliot, 2000; Gray, 1994a).²

What is important about these theories at present is that they all ascribe two sets of emotional experiences to two partially distinct functional systems. In this model, anxiety derives from threat, not from loss of incentives; positive feelings such as eagerness and excitement derive from incentives, not from absence of threats (for reviews of evidence making this case from another theoretical starting point, see Higgins, 1996; Higgins, Shah, & Friedman, 1997).

To restate these points in terms of relationship motives, this view holds that feelings of excitement should derive from experiences of intimacy (but not from the absence of conflict). It holds that feelings of anxiety should derive from experiences of conflict (but not from low levels of intimacy). This line of reasoning (which has a great many implications) has never been tested in the context of close relationships. Doing so was one purpose of the study reported here.

Distance and Velocity

A second purpose of the study was to examine a more subtle theoretical issue related to the association between these motives and affect. Some views hold that affect arises from attaining incentives or arriving at threats. In terms of relationships, having intimacy should yield excitement, elation, and interest, and having conflict should yield anxiety and distress. Other theories hold that affect is created by change from one state to another (e.g., Carver & Scheier, 1990, 1998; Hsee & Abelson, 1991). In terms of relationship processes, increasing intimacy should yield feelings of eagerness and excitement, irrespective of the current level of intimacy. Increasing threat should yield feelings of anxiety and distress, irrespective of the current level of threat. To use a physical analogy, a current level of intimacy (or conflict) would correspond to the physical parameter of distance from a goal; rate of change in intimacy (or conflict) would relate to the physical parameter of velocity (Carver & Scheier, 1990, 1998).

There are similarities between this model and Berscheid's (1983, 1991) theory with which we began this article, but there are also differences. Berscheid's

theory concerns movement toward and away from goals, but it focuses on cases of abrupt movement. That is, it holds that emotion arises from disruption of anticipated events. In the analogy used in the previous paragraph, the Berscheid model suggests that affect arises from acceleration. Thus, it is more restrictive about circumstances in which affect arises. In contrast, the velocity model pertains as well to shifts that are more gradual, suggesting that affect rises and falls continually with rate of progress.

The velocity hypothesis has received support in several studies. Hsee and colleagues gave participants a description of a situation that reflected either quick or slow increase in class rank (Hsee & Abelson, 1991), class grades, and salary (Hsee, Abelson & Salovey, 1991). In other studies, a computer simulation varied increasing versus decreasing monetary investment and academic performance (Hsee, Salovey, & Abelson, 1994). Participants invariably were more satisfied with faster increases. The researchers concluded that satisfaction was a function of both the level of one's current state and the rate at which one was moving toward a desired outcome.

Lawrence, Carver, and Scheier (2002) investigated the velocity hypothesis by presenting participants with false feedback on task performance over six trial blocks. Scores increased over blocks, decreased over blocks, or were stable across blocks, with the last block being equal for all groups. Velocity was defined as the slope of performance over time. Positive slopes related to positive mood and negative slopes related to negative mood. Mood scores did not relate to the total number of successes but rather the increase or decrease in successes over time, suggesting that change was a determinant of affect. Other evidence consistent with the velocity hypothesis has been reported by Brunstein (1993) and Affleck et al. (1998).

The velocity idea also has been applied to the relationship context. Drawing in part on ideas from Carver and Scheier (1990), Baumeister and Bratslavsky (1999) reviewed indirect evidence suggesting that rapid increases in intimacy relate to positive emotions such as passion. They suggested that passion is a function of the velocity of change in intimacy over time. Thus, passion should not derive only from the current level of intimacy but from the rate with which intimacy changes. The notion of rapid change in intimacy has been similarly discussed in terms of self-expansion (Aron & Aron, 1986; Aron, Norman, & Aron, 2001), with rapid expansion yielding the feelings associated with falling in love.

In empirical work that bears on this issue, Karney and Frye (2002) found that married partners evaluate their happiness or satisfaction with their relationship more on perceptions of recent improvements than on the quality of the relationship at that particular time. Karney and

Bradbury (1997) also have found that decreasing satisfaction (compared to low initial satisfaction) predicted dissolution of relationships over a period of 4 years.

Although the velocity model has been suggested in several guises as a useful one in the close relationship context, relatively little research has examined it explicitly. Research that does bear on this issue in intimate relationships has examined variations over extended periods of time (6-month intervals) rather than variations in the course of day-to-day life (e.g., Karney & Frye, 2002). In principle, the velocity hypothesis should apply in the short term as well as the longer term. Testing this prediction was the second purpose of the study reported here.

The work reviewed thus far examined affective correlates of position and velocity with respect to approach goals. Other work has addressed the affective consequences of position and velocity with respect to threat. Anxiety has been shown to be greater in persons who perceive threats as rapidly mounting and surging, a characteristic termed *looming vulnerability* (Riskind, Williams, Gessner, Chronsniak, & Cortina, 2000; see also Barlow, 2000). We are not aware of any research that has examined this view of anxiety to close relationships, however. The study we report here did so.

Finally, although the velocity notion has been applied both to incentives and to threats, there is an important limitation in all of these studies. In each case, the affective measure that was related to position and velocity was a single dimension, ranging from positive (e.g., satisfaction, good mood) to negative (e.g., dissatisfaction, bad mood). That is, as far as we know, no research has tested the velocity hypothesis simultaneously with respect to the two distinct aspects of affect that we focused on earlier. The study we report here did so.

Present Research

This study used an electronic daily diary design (Bolger, Davis, & Rafaeli, 2003; Laurenceau & Bolger, in press) to examine the role of perceptions of current states and perceptions of change as predictors of two classes of affect in a sample of romantically involved couples. Each partner independently answered questions on a Personal Digital Assistant (PDA) twice a day for 10 consecutive days, assessing momentary perceptions of intimacy, conflict, change in intimacy, change in conflict, positive-engagement emotions, and anxiety-related emotions. We hypothesized that intimacy (and not conflict) should be uniquely related to positive emotion, reflecting a relationship approach process. Moreover, we expected that perceived increases in intimacy should predict the positive emotions above and beyond perceptions of level of intimacy, level of conflict, and change in conflict. We hypothesized that conflict (and not intimacy) should be uniquely related to anxiety-related

emotion, reflecting a relationship avoidance process. We also predicted that perceived increases in conflict should relate to anxiety above and beyond perceptions of level of conflict, level of intimacy, and changes in intimacy.

METHOD

Participants

One hundred eighty-four participants, from 92 exclusive, romantic couples were recruited from introductory psychology classes at the University of Miami. Students participated to receive research participation credit. Mean age of male partners was 20.39 ($SD = 3.37$) and of female partners was 19.40 ($SD = 2.76$). Average length of relationship was 1.35 years ($SD = 2.15$, range = 2 weeks to 16 years). Of this sample, 88 couples were exclusively dating, 10 couples were living together, and 4 more couples were married. The self-reported ethnicity distribution of the sample included 9 (5%) African Americans, 74 (40%) Hispanics, 7 (4%) Asian/Pacific Islander, 3 (2%) Native Americans, 77 (42%) European Americans, and 14 (8%) participants who classified themselves as "other."

Procedure

Couples were recruited via a screening questionnaire asking students if they were in an exclusive romantic relationship and requesting their contact information. Those in relationships were contacted and asked to meet with a research assistant. Each partner was provided with a PDA and told that the study would consist of the daily recording of their relationship-related experiences on PDAs twice a day for 10 consecutive days—once in the morning approximately 1 hour after waking and once in the evening approximately 1 hour before going to sleep.

Participants were trained in the use of the Experience Sampling Program (ESP; Feldman Barrett, 2000; Feldman Barrett, & Barrett, 2001) on PDAs running the Palm OS®, which was used for the presentation of the daily diary items. The training session consisted of an introduction to basic ESP diary entry procedures on the PDA (e.g., use of the stylus for pointing and clicking on the screen of the device) and a trial of the diary protocol that led participants through each diary item to ensure understanding and clarity. The ESP program was set up to present a range of questions about the daily experience of the couple (detailed below).

Various terms included in the program were defined for the participants during this session. *Passion* was defined as "a state of intense longing for union with your partner" (Hatfield & Rapson, 1987, 1993), *intimacy* was defined as "a feeling of emotional closeness and connectedness not necessarily related to sexual or physi-

cal contact" (Laurenceau et al., 1998; Reis & Shaver, 1988), and *conflict* was defined as "an interaction between partners expressing opposing values, opinions, and goals that can progress to painful, threatening emotions" (adapted from Brehm, 1992). Couples then completed basic demographic information, including age, length of relationship, and education. A set of questionnaires was completed before and after the 10-day diary recording period as part of a larger study.

Daily Diary Measure

Daily diaries were completed independently by each partner twice daily for 10 consecutive days, resulting in 20 entries per person. Each partner completed a set of items using a Palm™ IIIx PDA device running the ESP software. Participants initiated a trial by turning on the device and following the directions on the initial display screen stating "Tap here to begin." They were then led through the questions for that trial.

To track compliance, the ESP software uses a time-data stamp to record time of day, date, and reaction time for each entry recorded by participants during a diary trial. Specifically, diary compliance was assessed by determining the number of trials completed at the instructed times and the number of trials missed or recorded at incorrect times (Stone, Shiffman, Schwartz, Broderick, & Hufford, 2003). Out of 3,680 possible trials (184 partners \times 10 days \times 2 times a day), only 545 trials were not completed by participants during the requested morning or evening time range. Data from these trials were not included in the analyses reported in this article. This indicates that individuals were compliant approximately 85% of the time, which is comparable to a recent review of recorded compliance in electronic diary studies ranging from 50% to 99%, with the mean rate hovering somewhere between 80% to 85% (Hufford & Shields, 2002).

In addition, we ensured the integrity of the diary data by conducting prestudy piloting to examine the reaction time for reading and answering questions. Piloting indicated that a reaction time of more than 60 hundredths of a second was the minimum amount of time needed to respond to an item accurately; thus, data recorded at or below 60 hundredths of a second were removed prior to analyses. As a result, 889 items (1.7%) out of a possible 51,520 (3,680 trials \times 14 items) were removed from analysis due to this criterion. Exceedingly low reactions times to items may have occurred due to participant "double-tapping," whereby a response to one item was erroneously carried over to the next item. In sum, we believe that these diary data captured an accurate sampling of the participants' everyday experiences during the diary recording period.

Current intimacy and conflict. The diaries contained items asking respondents to record their levels of felt

intimacy (“At this moment, how much intimacy/connectedness do you feel with your partner?”) and conflict (“At this moment, how much conflict are you experiencing currently in your relationship?”). Responses assessing levels of intimacy and conflict were recorded on a 7-point Likert scale ranging from 0 (*none at all*) to 6 (*an extreme amount*).

Change in intimacy and conflict. To assess perceived change, or velocity, with respect to intimacy and conflict, participants indicated the degree to which they perceived intimacy had changed since the last trial (“How has the level of intimacy/connectedness with your partner CHANGED since your last entry?”). A similarly worded item was used to assess perceived change in conflict (“How has the level of conflict in your relationship CHANGED since your last entry?”). The participants recorded each answer on a 7-point Likert scale ranging from -3 (*extremely decreased*) to 0 (*no change*) to +3 (*extremely increased*).

Positive affect and anxiety. Affect was sampled by asking participants to record the degree of positive affect (e.g., “How excited have you felt in your relationship since your last entry?”) and anxiety (e.g., “How anxious have you felt in your relationship since your last entry?”) they experienced between recording entries (the time frames were specified to keep assessment periods distinct from each other for participants). Positive affect was assessed using the following terms: excitement, eagerness, elation, passion, and interest/attentiveness. Anxiety was assessed using the following terms: anxiety, fear, tension, distress, and nervousness. These terms were sampled from frequently used measures of affect such as the Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988) and the Current Mood Questionnaire (Feldman Barrett & Russell, 1998). Affect items were presented in a block at the end of each trial and items were randomized within blocks. Responses assessing affect were recorded on a 7-point scale ranging from 0 (*none at all*) to 6 (*an extreme amount*). Participant responses to each set of five emotion terms were averaged to create aggregated positive affect and anxiety scores. Alphas for Day 1 positive affect were .92 and .90 for male and female partners; alphas for Day 1 anxiety were .93 and .92 for male and female partners.

RESULTS

Data from this study conformed to a multilevel structure, with repeated measures of intimacy, conflict, and affect nested within an individual partner and partners nested within a particular couple. Because of this nested structure, we utilized Hierarchical Linear Modeling (HLM; Raudenbush & Bryk, 2002). In particular, we conceptualized the male and female partner affect ratings as

a pair of multivariate outcomes for each couple, as detailed in Raudenbush, Brennan, and Barnett (1995) and Laurenceau and Bolger (in press). This HLM analytic procedure allowed us to examine within-couple variability in male and female daily emotion ratings and accommodated missing repeated measures in which missing information is assumed to occur at random by using full information maximum likelihood for parameter estimates (Schafer & Graham, 2002).

Means and standard deviations for the variables assessed are reported in Table 1. Pooled within-subject correlations among the variables for men and women are in Table 2. Several points about those correlations are noteworthy. Positive and negative affect, although inversely correlated, were not related strongly, consistent with the idea that these are distinct experiences. Perceived conflict and intimacy were not strongly related among men, although the strength was moderately strong among women. Even correlations between perceptions of change in conflict and change in intimacy, although moderately strong, were not prohibitively strong.³

Predicting positive affect. The first hypothesis was that perceived increases in intimacy would relate positively to levels of positive affect, above and beyond levels of intimacy, conflict, and changes in conflict. These hypotheses were tested using the following HLM level-1 equation:

$$\begin{aligned}
 PA_{ti} = & \text{male } [\pi_{0im}] + \text{female } [\pi_{0if}] + \pi_{1im}(\text{INTLVL}_{\text{male}})_{ti} + \\
 & \pi_{1if}(\text{INTLVL}_{\text{female}})_{ti} + \pi_{2im}(\text{INTCHG}_{\text{male}})_{ti} + \\
 & \pi_{2if}(\text{INTCHG}_{\text{female}})_{ti} + \pi_{3im}(\text{CONLVL}_{\text{male}})_{ti} + \\
 & \pi_{3if}(\text{CONLVL}_{\text{female}})_{ti} + \pi_{4im}(\text{CONCHG}_{\text{male}})_{ti} + \\
 & \pi_{4if}(\text{CONCHG}_{\text{female}})_{ti} + e_{ti},
 \end{aligned}
 \tag{1}$$

where PA is a participant’s level of positive affect at trial t for couple i; male is a dummy indicator that is 1 for all male partner data and 0 for all female partner data; female is a dummy indicator that is 1 for all female partner data and 0 for all male partner data; π_{0im} and π_{0if} are the model intercepts for men and women, $\text{INTLVL}_{\text{male}}$ is the male partner level of intimacy at a particular trial t for couple i; $\text{INTLVL}_{\text{female}}$ is the female partner level of intimacy at a particular trial t for couple i; $\text{INTCHG}_{\text{male}}$ is the male partner perceived change in intimacy from the previous trial to the current trial for couple i; $\text{INTCHG}_{\text{female}}$ is the female partner perceived change in intimacy from the previous trial to the current trial for couple i; $\text{CONLVL}_{\text{male}}$ is the male partner level of conflict at trial t for couple i; $\text{CONLVL}_{\text{female}}$ is the female partner level of conflict at trial t for couple i; $\text{CONCHG}_{\text{male}}$ is the male partner perceived change in conflict from the previous trial to the current trial for couple i; $\text{CONCHG}_{\text{female}}$ is the

TABLE 1: Variable Means and Standard Deviations for Male and Female Partners

Variable	M	SD
Predictor variables		
Male level of intimacy	3.94	.97
Female level of intimacy	4.14	1.08
Male intimacy change ^a	.21	1.00
Female intimacy change ^a	.30	1.03
Male level of conflict	1.20	1.13
Female level of conflict	1.28	1.09
Male conflict change ^a	-.16	.92
Female conflict change ^a	-.16	.98
Dependent variables		
Male positive affect	3.04	.82
Female positive affect	3.25	.90
Male anxiety	1.43	.75
Female anxiety	1.33	.81

a. Ratings of change ranged from -3 (*extremely decreased*) to +3 (*extremely increased*), with 0 indicating no change. Other ratings ranged from 0 (*none at all*) to 6 (*an extreme amount*).

female's perceived change in conflict from the previous trial to the current trial for couple i ; π_{1im} and π_{1if} are regression coefficients capturing the linear relationship between levels of intimacy and positive affect; π_{2im} and π_{2if} are regression coefficients capturing the linear relationship between change in intimacy and positive affect; π_{3im} and π_{3if} are regression coefficients capturing the linear relationship between levels of conflict and positive affect; π_{4im} and π_{4if} are regression coefficients capturing the linear relationship between change in conflict and positive affect; and $e_{i\cdot}$ is a within-couple error component. Although the relevant hypotheses are conducted at the within-couple level (i.e., level 1) of analysis, individual differences (i.e., variance components) in level 1 parameters were estimated as appropriate at level 2.

Parameter estimates and significance tests for this HLM model are presented in Table 3. Levels of felt intimacy for both men and women were positively and significantly related to positive affect on a trial-to-trial basis. Despite this, as predicted, perceived change in intimacy was a significant predictor of positive affect for both male partners and female partners, above and beyond the contribution of intimacy levels, conflict levels, and perceived changes in conflict. Because position and movement associated with conflict should relate uniquely to anxiety and not to positive affect, we also expected that conflict level and perceived change in conflict should not emerge as strong predictors of positive affect. In general, this was observed in the data. However, level of conflict for men did show a small but significant inverse association with positive affect.

Predicting anxiety. The second hypothesis was that perceived increasing changes in conflict would be positively

related to levels of negative affect, above and beyond levels of conflict, intimacy, and changes in intimacy. This hypothesis was tested using modeling that was parallel to that described above for positive affect. Parameter estimates and significance tests for the anxiety model are presented in Table 4. Levels of perceived conflict for both men and women were positively and significantly related to anxiety on a trial-to-trial basis. In addition, and as predicted, perceived change in conflict was a significant and unique predictor of anxiety for men, above and beyond the contribution of intimacy levels, conflict levels, and perceived changes in intimacy. This relationship was not significant for women, however. Because position and perceived movement associated with intimacy should be uniquely related to positive affect and not to anxiety, we also expected that perceived intimacy level and perceived change in intimacy should not emerge as strong predictors of anxiety. This did appear to be the case.⁴

DISCUSSION

This study examined how daily fluctuations in positive affect and anxiety throughout 10 days relate to both levels of and perceived changes in intimacy and conflict over that period. Our first hypothesis was that daily fluctuations in positive affect and anxiety would relate to two different sorts of experiences. That is, we expected positive affect to track variations in intimacy rather than variations pertaining to conflict. We expected anxiety to track variations in conflict rather than variations pertaining to intimacy. In general, these expectations were borne out in the data. Of the four parameters relating intimacy to positive affect, all were significant; of the four relating conflict to positive affect, only one was significant. Of the four parameters relating conflict to anxiety, three were significant; of the four relating intimacy to anxiety, none was significant. Thus, the closer the person was to higher levels of intimacy, and the greater the perception of movement toward intimacy, the higher the positive affect. The closer the person was to conflict, and the greater the perception of movement toward conflict, the greater the anxiety.

These findings are very consistent with a model in which these positive feelings arise through a mechanism involving pursuit of incentives, whereas feelings of anxiety arise through a mechanism involving avoidance of threats. The findings join a larger literature, using diverse methodologies, in suggesting that these two sets of feelings have origins in processes that are partially distinct (e.g., Cacioppo et al., 1999; Carver, 2001; Davidson, 1998; Gable et al., 2000; Higgins, 1996; Watson et al., 1999).

Our second hypothesis was that perceived changes would contribute variance to prediction of the relevant

TABLE 2: Pooled Within-Subject Correlations of Independent and Dependent Variables for Male and Female Partners

Variable	1	2	3	4	5	6
1. Intimacy	—	.41***	-.17***	-.23***	.35***	-.18**
2. Intimacy change	.41***	—	-.19***	-.36***	.35***	-.17**
3. Conflict	-.30***	-.25***	—	.59***	-.33***	.62***
4. Conflict change	-.23***	-.35***	.43***	—	-.21***	.32***
5. Positive affect	.25***	.26***	-.15***	-.12**	—	-.15***
6. Anxiety	-.11**	-.09*	.28***	.17***	-.14***	—

NOTE: Variables for male partners are above the diagonal; variables for female partners are below the diagonal.

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

TABLE 3: HLM Fixed Effects Regressing Positive Affect on Male and Female Changes in Intimacy, Levels of Intimacy, Levels of Conflict, and Changes in Conflict

Effect	Raw Coefficient	Standard Error	t Ratio	Effect Size r
Male intercept, B_{m00}	3.04	.10	—	—
Female intercept, B_{f00}	3.25	.13	—	—
Male level of intimacy, B_{m01}	.15	.03	5.95***	.53
Female level of intimacy, B_{f01}	.17	.04	4.63***	.44
Male intimacy change, B_{m02}	.09	.03	3.08**	.31
Female intimacy change, B_{f02}	.12	.03	4.48***	.43
Male level of conflict, B_{m03}	-.05	.02	-2.02*	.21
Female level of conflict, B_{f03}	-.06	.03	-1.87	.19
Male conflict change, B_{m04}	-.04	.02	-1.68	.17
Female conflict change, B_{f04}	.02	.03	.79	.08

NOTE: HLM = Hierarchical Linear Modeling. To compute the effect size r associated with each t , the authors used the following formula: $r = \sqrt{t^2 / (t^2 + df)}$.

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

affect. That is, we expected perceived change in intimacy to predict positive affect above and beyond perceived level of intimacy (and we expected this association to be specific to positive affect rather than anxiety). In line with these expectations, perceived change in intimacy related positively to daily positive affect, among both male and female partners. This effect was above and beyond the effect of current level of intimacy (which also contributed to prediction), level of conflict, and perceived change in conflict. Thus, both level and perceived changes in intimacy were significant predictors of positive affect.

In the same way, we expected perceived change in conflict to predict anxiety above and beyond perceived current conflict level (and we expected this to be specific to anxiety rather than positive affect). In line with these expectations, perceived change in conflict related positively to daily anxiety among male partners but not among female partners, above and beyond level of conflict (which contributed to prediction for both partners), level of intimacy, and change in intimacy. Thus, three of four predictions pertaining to perception of change were supported.

TABLE 4: HLM Fixed Effects Regressing Anxiety on Male and Female Changes in Conflict, Levels of Intimacy, Levels of Conflict, and Changes in Intimacy

Effect	Raw Coefficient	Standard Error	t Ratio	Effect Size r
Male intercept, B_{m00}	1.43	.10	—	—
Female intercept, B_{f00}	1.33	.10	—	—
Male level of intimacy, B_{m01}	-.03	.03	-1.21	.13
Female level of intimacy, B_{f01}	-.03	.03	-.95	.10
Male intimacy change, B_{m02}	.02	.02	.98	.10
Female intimacy change, B_{f02}	.02	.02	1.33	.14
Male level of conflict, B_{m03}	.17	.03	6.27***	.55
Female level of conflict, B_{f03}	.21	.03	6.18***	.54
Male conflict change, B_{m04}	.06	.02	2.83***	.28
Female conflict change, B_{f04}	-.01	.03	-.23	.02

NOTE: HLM = Hierarchical Linear Modeling. To compute the effect size r associated with each t , the authors used the following formula: $r = \sqrt{t^2 / (t^2 + df)}$.

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

Why was there no link between anxiety and perceived change in conflict among women? The answer is unclear. There is evidence that women tolerate greater physiological arousal in the context of interpersonal conflict than do men (e.g., Levenson, Carstensen, & Gottman, 1994). It may be that women are correspondingly less likely to distinguish conflict from increase in conflict as experiences. This interpretation, of course, is quite speculative. The meaning of this gender difference awaits further investigation.

Despite that caveat, these findings join an emerging literature bearing on how change across time influences affect. Studies examining such processes are still relatively few in number (Affleck et al., 1998; Brunstein, 1993; Hsee & Abelson, 1991; Hsee et al., 1991, 1994; Lawrence et al., 2002; Riskind et al., 2000). The findings reported here extend that literature to the context of close relationships. Our finding that perceived change in intimacy relates to positive affect above and beyond level of intimacy fits well with Baumeister and Bratslavsky's (1999) idea that passion is highest when the experience of intimacy with a partner is rapidly increasing. Our finding that anxiety relates not just to levels of

conflict but to change in conflict fits well with Riskind et al.'s (2000) idea that anxiety is enhanced by a quickly approaching (not simply present) threat.

Although our focus in this section is on effects of perceived change in approach and avoidance relationship-related affect because of its novel theoretical contribution to the literature, we should reiterate that perceived change was not the only contributor to the two affects under study. In both cases, perceptions of the current level of the relevant experience (intimacy and conflict) also made consistent contributions to the relevant affect in question.

Limitations and Strengths

We should note explicitly some limitations of the work reported here. First, the study is based completely on self-reports. The participants in this study reported their own perceptions of their intimacy, conflict, and emotional experiences. We do not have the sort of data that follow from observational methods. We cannot be certain that the diary reports would match with more objective behavioral indicators of conflict, intimacy, and affect. Furthermore, participants reported across time periods of half days; such reports entail retrospection, which is often subject to distortion (cf. Levine & Safer, 2002). Indeed, there is evidence that over long periods of time, romantic partners distort their recall of their prior satisfaction in ways that enhance their perceptions of their present relational context (Frye & Karney, 2002; Karney & Coombs, 2000). However, the fact that we found patterns for anxiety that paralleled those for positive affect tends to suggest that our data did not have such retrospective distortion.

Another limitation on the study is that the young age and relatively short relationship length of the sample may limit the generalizability of the results. The processes that underlie positive and negative affect may differ with relationships of greater commitment, such as marriage. On the other hand, some research suggests that understanding marital satisfaction and stability requires attention to both positivity and negativity (Gable & Reis, 2001; Huston, Caughlin, Houts, Smith, George, 2001), which is consistent with our findings.

A third limitation is that the nature of the data collection process leaves ambiguity about directionality in the effects obtained. Perceptions of change in intimacy and changes in conflict were collected at the same time as ratings of affect. The theoretical viewpoint from which we proceeded holds that the perception underlies the feelings and frames our interpretation of the findings. However, it is possible that the feelings influenced perception of change (cf. Karney & Frye, 2002) or that they emerge simultaneously. Even if this were so, the findings would still suggest that the experiences co-occur and that the

patterns that coalesce for positive affect and anxiety, respectively, have different origins.

A fourth limitation is that our treatment of intimacy as an incentive and conflict as a threat disregarded variations within the sample. That is, we operationalized these qualities with the implicit assumption that a very high level of intimacy and a total absence of conflict were the universally desired goals. Clearly, however, people vary in their thresholds for being bothered by conflict and also how much conflict they can tolerate. Similarly, people vary with regard to how much intimacy they want in their relationships. These differences are important, although they were not examined here. Future work will be designed to take them into account.

Finally, our findings are limited in that we focused on two specific types of emotion, one that is consensually tied to movement toward incentives and the other to movement toward threats. As noted in Note 2, these are not the only emotional qualities that pertain to approach and avoidance, and they are not the only emotional qualities that matter in relationships. Other obvious candidates include anger, contempt, and guilt (Gottman, 1994). To properly study an emotion such as anger will require being particularly explicit and clear about goal values to participants. We named "conflict" as an avoidance goal in this study because it is an experience that most people prefer to avoid. Furthermore, in defining conflict to participants, we emphasized the threat that it poses. However, many conflicts also involve the simultaneous thwarting of desires for incentives, which can induce anger (cf. Carver, 2004). To properly investigate the experience of anger will require distinguishing between those aspects of conflict that are punishing and those aspects of conflict that involve failing to have one's desires met. This is also a goal for future work.

Despite these limitations, this work also has several noteworthy strengths. It tested major aspects of a current emotion theory in a close relationship context. It examined theoretically selected affects separately instead of examining only one affect or a single dimension from positive to negative. It used a relatively novel methodology to capture the everyday experience of couples as they go about their daily lives.

A few more words about the methodological strengths of the study are perhaps warranted. The electronic PDAs used here have several advantages compared to earlier diary studies (Bolger et al., 2003). Earlier studies frequently used paper-and-pencil forms that can adversely affect the diary data in terms of accuracy, anonymity, convenience, and compliance (Stone et al., 2003). The devices used here improve on those traditional methods in several ways: (a) PDAs are easier to keep track of than numerous paper forms; (b) data entry error is minimized because data are uploaded into a

computer database; (c) the time and date of each response is recorded, to be able to assess compliance with the diary protocol; and (d) data are kept in the PDAs and cannot be viewed by any other individual, including a partner, until uploaded into a database by research assistants. Thus, although this design still has some of the limitations of all traditional self-report methods, we believe it represents an improvement over paper-and-pencil diary methods for studying close relationship processes (Laurenceau & Bolger, in press; Troy & Laurenceau, 2003).

Applied Implications

The findings reported here have a potentially important implication for intervention in relationships (or for self-intervention). Specifically, the findings suggest that decreasing conflict in close relationships may reduce anxiety-related emotion, but it will not necessarily induce positive emotions. Work on intimate relationships has tended to focus on understanding the processes that underlie aversive relationship experiences, such as conflict, with less attention paid to processes that involve incentives in the relationship (see Fincham & Beach, 1999; Gable & Reis, 2001). This may be a mistake.

For example, although work by Gottman (1994) has suggested that well-functioning couples have at least a 5:1 ratio of positive to negative interactions, a focus on reducing or eliminating the number of negative interactions would not necessarily increase the number of positive ones. Moreover, because most relationship researchers assume that some degree of conflict in a relationship is unavoidable, understanding the (likely) independent processes that contribute to approach-related relationship outcomes is equally important (Gable & Reis, 2001).

The findings reported here suggest that to understand adaptive relationship functioning requires examining interpersonal processes that influence the experience of both relationship positivity and relationship negativity (see also Fincham & Linfield, 1997). Although the topography and effects of conflict in close relationships are relatively well understood, a better understanding of the process by which intimacy is initiated, maintained, and enhanced is needed (Laurenceau, Feldman, & Rovine, in press). A comprehensive approach to couple and marital intervention may need to focus not just on reduction or management of conflict but also on the enhancement of appetitive processes, such as intimacy and connectedness.

NOTES

1. Two further subtleties should perhaps be noted here. One concerns the nature of intimacy as a goal. Intimacy is not a goal that is attained once and for all, as is the case (for example) with a high school

diploma. It is a continuing or recurrent goal, an aspect of a relationship to be created and recreated. Presumably, the sense of intimacy falls periodically as people turn to other activities and rises as the people in the relationship take steps to enhance it. A second issue concerns the fact that there are variations across persons and stages of a relationship in the level of intimacy that is desired as ideal. For some people and at some times, there is such a thing as too much intimacy. This issue, although important, is beyond the scope of the study reported here.

2. We focus here on the affects that relate to movement toward the incentive (excitement) or threat (anxiety). We should note, however, that these are not the only affects that can be linked to these two systems. For example, disruption of movement toward an incentive can yield frustration or anger (Carver, 2004; Harmon-Jones & Allen, 1998) as well as reduction in positive affects such as excitement. Full consideration of this greater complexity is beyond the scope of this article, however.

3. We also examined prediction from actual change in reported level of intimacy and conflict from Time 1 to Time 2. Perceived change and actual change in intimacy and conflict correlated .47 and .44, respectively (the correlations are likely attenuated by low variability in actual change). Actual change did not systematically relate to affect in the same pattern as did perceived change. This suggests that people's perceptions are more important than objective reality in these phenomena.

4. To examine potential differences due to ethnicity, we conducted Hierarchical Linear Modeling analyses with an ethnicity indicator entered as a potential level-2 moderator of level-1 associations. There were no ethnicity effects for positive affect as an outcome. With anxiety as the outcome, three of eight possible ethnicity effects reached statistical significance, but there was no discernable pattern in the direction of effects. We also conducted analyses with relationship length as a level-2 moderator of the level-1 associations. For positive affect, two of eight associations were moderated by relationship length (male intimacy change and male level of conflict). For anxiety, one of eight associations was moderated by relationship length (male level of conflict). In all of these cases, the moderation was such that a stronger effect occurred among persons with greater relationship length.

REFERENCES

- Affleck, G., Tennen, H., Urrows, S., Higgins, P., Abeles, M., Hall, C., et al. (1998). Fibromyalgia and women's pursuit of personal goals: A daily process analysis. *Health Psychology, 17*, 40-47.
- Andersen, P. A., & Guerrero, L. K. (1998). Principles of communication and emotion in social interaction. In P. A. Andersen & L. K. Guerrero (Eds.), *Communication and emotion: Research, theory, applications, and contexts* (pp. 49-96). San Diego, CA: Academic Press.
- Aron, A., & Aron, E. N. (1986). *Love and the expansion of self: Understanding attraction and satisfaction*. New York: Hemisphere.
- Aron, A., Norman, C. C., & Aron, E. N. (2001). Shared self-expanding activities as a means of maintaining and enhancing close romantic relationships. In J. H. Harvey & A. E. Wenzel (Eds.), *Close romantic relationships: Maintenance and enhancement* (pp. 47-66). Mahwah, NJ: Lawrence Erlbaum.
- Barlow, D. H. (2000). Unraveling the mysteries of anxiety and its disorders from the perspective of emotion theory. *American Psychologist, 55*, 1247-1263.
- Baumeister, R. F., & Bratslavsky, E. (1999). Passion, intimacy, and time: Passionate love as a function of change in intimacy. *Personality and Social Psychology Review, 3*, 46-67.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*, 497-529.
- Berscheid, E. (1983). Emotion. In H. H. Kelley, E. Berscheid, A. Christensen, J. H. Harvey, T. L. Huston, G. Levinger, et al. (Eds.), *Close relationships* (pp. 110-168). New York: Freeman.
- Berscheid, E. (1991). The emotion-in-relationships model: Reflections and update. In W. Kessen & A. Ortony (Eds.), *Memories, thoughts, and emotions: Essays in honor of George Mandler* (pp. 323-335). Hillsdale, NJ: Lawrence Erlbaum.
- Berscheid, E., & Ammazalorso, H. (2001). Emotional experience in close relationships. In G. J. O. Fletcher & M. S. Clark (Eds.),

- Blackwell handbook of social psychology: Interpersonal processes* (pp. 308-330). Malden, MA: Blackwell.
- Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology*, *54*, 579-616.
- Booth, A., Crouter, A. C., & Clements, M. (2001). *Couples in conflict*. Mahwah, NJ: Lawrence Erlbaum.
- Brehm, S. S. (1992). *Intimate relationships* (2nd ed.). New York: McGraw-Hill.
- Brunstein, J. C. (1993). Personal goals and subjective well-being: A longitudinal study. *Journal of Personality and Social Psychology*, *65*, 1061-1070.
- Cacioppo, J. T., Gardner, W. L., & Berntson, G. G. (1999). The affect system has parallel and integrative processing components: Form follows function. *Journal of Personality and Social Psychology*, *76*, 839-855.
- Carver, C. S. (2001). Affect and the functional bases of behavior: On the dimensional structure of affective experience. *Personality and Social Psychology Review*, *5*, 345-356.
- Carver, C. S. (2004). Negative affects deriving from the behavioral approach system. *Emotion*, *4*, 3-22.
- Carver, C. S., & Scheier, M. F. (1990). Origins and functions of positive and negative affect: A control-process view. *Psychological Review*, *97*, 19-35.
- Carver, C. S., & Scheier, M. F. (1998). *On the self-regulation of behavior*. New York: Cambridge University Press.
- Carver, C. S., Sutton, S. K., & Scheier, M. (2000). Action, emotion, and personality: Emerging conceptual integration. *Personality and Social Psychology Bulletin*, *26*, 741-751.
- Carver, C. S., & White, T. L. (1994). Behavioral inhibition, behavioral activation, and affective responses to impending reward and punishment: The BIS/BAS scales. *Journal of Personality and Social Psychology*, *67*, 319-333.
- Davidson, R. J. (1984). Affect, cognition, and hemispheric specialization. In C. E. Izard, J. Kagan, & R. Zajonc (Eds.), *Emotion, cognition, and behavior* (pp. 320-365). New York: Cambridge University Press.
- Davidson, R. J. (1998). Affective style and affective disorders: Perspectives from affective neuroscience. *Cognition and Emotion*, *12*, 307-330.
- Depue, R. A., & Collins, P. F. (1999). Neurobiology of the structure of personality: Dopamine, facilitation of incentive motivation, and extraversion. *Behavioral and Brain Sciences*, *22*, 491-517.
- Depue, R. A., & Zald, D. H. (1993). Biological and environmental processes in nonpsychotic psychopathology: A neurobehavioral perspective. In C. G. Costello (Ed.), *Basic issues in psychopathology* (pp. 127-237). New York: Guilford.
- Feldman Barrett, L. (2000). *Experience sampling program*. Boston: Boston College. Retrieved from <http://www2.bc.edu/~barretli/esp/index.html>
- Feldman Barrett, L., & Barrett, D. J. (2001). An introduction to computerized experience sampling in psychology. *Social Science Computer Review*, *19*, 175-185.
- Feldman Barrett, L., & Russell, J. A. (1998). Independence and bipolarity in the structure of affect. *Journal of Personality and Social Psychology*, *74*, 967-984.
- Fincham, F. D., & Beach, S. R. (1999). Marital conflict: Implications for working with couples. *Annual Review of Psychology*, *50*, 47-77.
- Fincham, F. D., & Linfield, K. J. (1997). A new look at marital quality: can spouses feel positive and negative about their marriage? *Journal of Family Psychology*, *11*, 489-502.
- Fitzsimons, G. M., & Bargh, J. A. (2003). Thinking of you: Nonconscious pursuit of interpersonal goals associated with relationship partners. *Journal of Personality and Social Psychology*, *84*, 148-163.
- Fowles, D. C. (1993). Biological variables in psychopathology: A psychobiological perspective. In P. A. Sutker & H. E. Adams (Eds.), *Comprehensive handbook of psychopathology* (2nd ed., pp. 57-82). New York: Plenum.
- Frye, N. E., & Karney, B. R. (2002). Being better or getting better? Social and temporal comparisons as coping mechanisms in close relationships. *Personality and Social Psychology Bulletin*, *28*, 1287-1299.
- Gable, S. L., & Reis, H. T. (2001). Appetitive and aversive social interaction. In J. H. Harvey & A. E. Wenzel (Eds.), *Close romantic relationship maintenance and enhancement* (pp. 169-194). Mahwah, NJ: Lawrence Erlbaum.
- Gable, S. L., Reis, H. T., & Elliot, A. J. (2000). Behavioral activation and inhibition in everyday life. *Journal of Personality and Social Psychology*, *26*, 419-435.
- Geist, R. L., & Gilbert, D. G. (1996). Correlates of expressed and felt emotion during marital conflict: Satisfaction, personality, process, and outcome. *Personality and Individual Differences*, *21*, 49-60.
- Gottman, J. M. (1994). *What predicts divorce: The relationship between marital processes and marital outcomes*. Hillsdale, NJ: Lawrence Erlbaum.
- Gottman, J. M. (1999). *The marriage clinic: A scientifically based marital therapy*. New York: W. W. Norton & Company.
- Gray, J. A. (1994a). Personality dimensions and emotion systems. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 329-331). New York: Oxford University Press.
- Gray, J. A. (1994b). Three fundamental emotion systems. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 243-247). New York: Oxford University Press.
- Guerrero, L. K., & Andersen, P. A. (2000). Emotion in close relationships. In C. Hendrick & S. Hendrick (Eds.), *Close relationships: A sourcebook* (pp. 171-183). Thousand Oaks, CA: Sage.
- Harmon-Jones, E., & Allen, J. J. (1997). Behavioral activation sensitivity and resting frontal EEG asymmetry: Covariation of putative indicators related to risk for mood disorders. *Journal of Abnormal Psychology*, *106*, 159-163.
- Harmon-Jones, E., & Allen, J. J. B. (1998). Anger and frontal brain activity: Asymmetry consistent with approach motivation despite negative affective valence. *Journal of Personality and Social Psychology*, *74*, 1310-1316.
- Hatfield, E., & Rapson, R. (1987). Passionate love: New directions in research. *Advances in Personal Relationships*, *1*, 109-139.
- Hatfield, E., & Rapson, R. (1993). *Love, sex, and intimacy: Their psychology, biology, and history*. New York: HarperCollins.
- Higgins, E. T. (1996). Ideals, oughts, and regulatory focus: Affect and motivation from distinct pains and pleasures. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior* (pp. 91-114). New York: Guilford.
- Higgins, E. T., Shah, J., & Friedman, R. (1997). Emotional responses to goal attainment: Strength of regulatory focus as moderator. *Journal of Personality and Social Psychology*, *72*, 515-525.
- Hsee, C. K., & Abelson, R. P. (1991). Velocity relation: Satisfaction as a function of the first derivative of outcome over time. *Journal of Personality and Social Psychology*, *60*, 341-347.
- Hsee, C. K., Abelson, R. P., & Salovey, P. (1991). The relative weighting of position and velocity in satisfaction. *Psychological Science*, *2*, 263-266.
- Hsee, C. K., Salovey, P., & Abelson, R. P. (1994). The quasi-acceleration relation: Satisfaction as a function of the change of velocity of outcome over time. *Journal of Experimental Social Psychology*, *30*, 96-111.
- Hufford, M. R., & Shields, A. L. (2002). Electronic diaries: Applications and what works in the field. *Applied Clinical Trials*, *11*, 46-59.
- Huston, T. L., Caughlin, J. P., Houts, R. M., Smith, S. E., & George, L. J. (2001). The connubial crucible: Newlywed years as predictors of marital delight, distress, and divorce. *Journal of Personality and Social Psychology*, *80*, 237-252.
- Karney, B. R., & Bradbury, T. N. (1997). Neuroticism, marital interaction, and the trajectory of marital satisfaction. *Journal of Personality and Social Psychology*, *72*, 1075-1092.
- Karney, B. R., & Coombs, R. H. (2000). Memory bias in long-term close relationships: Consistency or improvement? *Personality and Social Psychology Bulletin*, *26*, 959-970.
- Karney, B. R., & Frye, N. E. (2002). "But we've been getting better lately": Comparing prospective and retrospective views of relationship development. *Journal of Personality and Social Psychology*, *82*, 222-238.
- Lang, P. J. (1995). The emotion probe: Studies of motivation and attention. *American Psychologist*, *50*, 372-385.
- Laurenceau, J. -P., & Bolger, N. (in press). Using diary methods to study marital and family processes [Special issue: Methodology]. *Journal of Family Psychology*.

- Laurenceau, J. -P., Feldman Barrett, L., & Rovine, M. J. (in press). Intimacy in marriage: A daily diary approach. *Journal of Family Psychology*.
- Laurenceau, J. -P., Feldman Barrett, L., & Pietromonaco, P. R. (1998). Intimacy as an interpersonal process: The importance of self-disclosure, and perceived partner responsiveness in interpersonal exchanges. *Journal of Personality and Social Psychology*, *74*, 1238-1251.
- Laurenceau, J. -P., Rivera, L. M., Schaffer, A., & Pietromonaco, P. R. (2004). Intimacy as an interpersonal process: Current status and future directions (pp. 61-78). In D. Mashek & A. Aron (Eds.), *Handbook of closeness and intimacy*. Mahwah, NJ: Lawrence Erlbaum.
- Lawrence, J. W., Carver, C. S., & Scheier, M. F. (2002). Velocity toward goal attainment in immediate experience as a determinant of affect. *Journal of Applied Social Psychology*, *32*, 788-802.
- Levenson, R. W., Carstensen, L. L., & Gottman, J. M. (1994). Influence of age and gender on affect, physiology, and their interrelations: A study of long-term marriages. *Journal of Personality and Social Psychology*, *67*, 56-68.
- Levine, L. J., & Safer, M. A. (2002). Sources of bias in memory for emotions. *Current Directions in Psychological Science*, *11*, 169-173.
- Mandler, G. (1980). The generation of emotion: A psychological theory. In R. Plutchik & H. Kellerman (Eds.), *Emotion: Theory, research and experience: Vol. I. Theories of emotion* (pp. 219-242). New York: Academic Press.
- McAdams, D. P. (1992). *Intimacy: The need to be close*. New York: Doubleday.
- Peplau, L., & Gordon, S. (1985). Women and men in love: Gender differences in close heterosexual relationships. In V. O'Leary, R. Unger, & B. Wallston (Eds.), *Women, gender, and social psychology* (pp. 257-292). Hillsdale, NJ: Lawrence Erlbaum.
- Raudenbush, S. W., Brennan, R. T., & Barnett, R. C. (1995). A multivariate hierarchical model for studying psychological change within married couples. *Journal of Family Psychology*, *9*, 161-174.
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). Thousand Oaks, CA: Sage.
- Reis, H. T. (1990). The role of intimacy in interpersonal relations. *Journal of Social and Clinical Psychology*, *9*, 15-30.
- Reis, H., Senchak, M., & Solomon, B. (1985). Sex differences in the intimacy of social interaction: Further examination of potential explanations. *Journal of Personality and Social Psychology*, *48*, 1204-1217.
- Reis, H., & Shaver, P. (1988). Intimacy as an interpersonal process. In S. W. Duck (Ed.), *Handbook of personal relationships: Theory, research, and intervention* (pp. 367-389). Chichester, UK: Wiley.
- Riskind, J. H., Williams, N. L., Gessner, T. L., Chronsiak, L. D., & Cortina, J. M. (2000). The looming maladaptive style: Anxiety, danger, and schematic processing. *Journal of Personality and Social Psychology*, *79*, 837-852.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*, 68-78.
- Sanderson, C. A., & Cantor, N. (2001). The association of intimacy goals and marital satisfaction: A test of four mediational hypotheses. *Personality and Social Psychology Bulletin*, *27*, 1567-1577.
- Sanderson, C. A., & Evans, S. M. (2001). Seeing one's partner through intimacy-colored glasses: An examination of the processes underlying the intimacy goals-relationship satisfaction link. *Personality and Social Psychology Bulletin*, *27*, 463-473.
- Schafer, J. L., & Graham, J. W. (2002). Missing data: Our view of the state of the art. *Psychological Methods*, *7*, 147-177.
- Simpson, J. A., Oriña, M. M., & Ickes, W. (2003). When accuracy hurts, and when it helps: A test of the empathic accuracy model in marital interactions. *Journal of Personality and Social Psychology*, *85*, 881-893.
- Smith, T. W., Sanders, J. D., & Alexander, J. F. (1990). What does the Cook and Medley Hostility Scale measure? Affect, behavior, and attributions in the marital context. *Journal of Personality and Social Psychology*, *58*, 699-708.
- Stone, A. A., Shiffman, S., Schwartz, B. J., Broderick, J. E., & Hufford, M. R. (2003). Patient compliance with paper and electronic diaries. *Controlled Clinical Trials*, *24*, 182-199.
- Troy, A., & Laurenceau, J. -P. (2003). Electronic daily diary methods: Uses, advantages, and limitations for close relationship research. *AABT Couples Research and Therapy Newsletter*, *9*, 3-7. Retrieved from <http://www.coupleessig.net/newsletters.htm>
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*, 1063-1070.
- Watson, D., Wiese, D., Vaidya, J., & Tellegen, A. (1999). The two general activation systems of affect structural findings, evolutionary considerations, and psychobiological evidence. *Journal of Personality and Social Psychology*, *76*, 820-838.

Received February 16, 2004

Revision accepted November 30, 2004