Shared Emotions in Shared Lives: Moments of Co-experienced Affect, More than Individually-experienced Affect, Linked to Relationship Quality

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Abstract

Motivated by collective emotions theories that propose emotions shared between individuals predict group level qualities, we hypothesized that co-experienced affect during interactions is associated with relationship quality, above and beyond the effects of individually-experienced affect. Consistent with Positivity Resonance Theory, we also hypothesized that co-experienced positive affect would have a stronger association with relationship quality than co-experienced negative affect. We tested these hypotheses in 150 married couples across three conversational interactions: a conflict, neutral, and pleasant topic. Spouses continuously rated their individual affective experience during each conversation while watching video-recordings of their interactions. These individual affect ratings were used to determine, for positive and negative affect separately, the number of seconds of co-experienced affect and individually-experienced affect during each conversation. In line with hypotheses, results from all three conversational topics suggest that more co-experienced positive affect is associated with greater marital quality, whereas more co-experienced negative affect is associated with worse marital quality. Individual level affect factors added little explanatory value beyond co-experienced affect. Comparing co-experienced positive affect and co-experienced negative affect, co-experienced positive affect generally outperformed co-experienced negative affect, although co-experienced negative affect was especially diagnostic during the pleasant conversational topic. Findings suggest co-experienced positive affect may be an integral component of high-quality relationships and highlight the power of co-experienced affect for individual perceptions of relationship quality.

Keywords: emotional valence, dyad, marriage, empathy, interpersonal interactions, positive psychology

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Recent theorizing on collective emotion and positivity resonance suggests that affect simultaneously co-experienced between individuals may have unique properties and correlates that cannot be captured at the individual or transactional level (Fredrickson, 2016; Goldenberg, Garcia, Halperin, & Gross, 2020). *Collective emotion* refers to macro-level affective phenomena that emerge from emotional dynamics among individuals who are responding to situations together, and is theorized to lead to the formation of group-level qualities (Barsade & Gibson, 2012; de Rivera, 1992; Goldenberg et al., 2020). A dyad is the smallest group in which collective affective phenomena can emerge, and marriage is the closest dyadic relationship most adults experience. Marital interactions in which partners discuss and respond to conversational content create a fertile breeding ground for dyadic collective or co-experienced affect (i.e., moments when both partners feel negative affect or both partners feel positive affect while engaged with one another). Decades of research suggests that affect during marital interactions contributes to relationship quality (Levenson & Gottman, 1983; Levenson, Carstensen, & Gottman, 1993, 1994). Yet because this past research has examined each individuals' affect during interactions or the extent to which one partner's affect influences their partner's affect (Carstensen et al., 1995), it remains unclear whether

simultaneously co-experienced affect is more strongly related to marital quality compared to individually-experienced affect.

Co-experienced affect may be closely related to group level qualities such as marital quality because moments of dyad-level, or co-experienced affect provide a clear indication of how the group is feeling as a whole. When affect is discordant or unshared between group members, group level feelings are less clear. For example, would a person who feels positive while their partner feels negative report that the group feels positive or negative? Moments of co-experienced affect may also have unique properties (e.g., greater intensity or interpersonal synchrony) that give them greater salience than an individual's overall or average level of affect during interactions. Additionally, affective states that a couple frequently co-experiences may reflect their perceptions of relationship quality (e.g., individuals who perceive their relationship to be good may be more likely to feel positive *together*). Thus, moments of co-experienced positive and negative affect may shape and be shaped by marital quality more so than individuals' unique affective experiences during interactions.

In line with these ideas, Positivity Resonance Theory describes love as a macro-level affective phenomenon that is emergent at the level of the group (e.g., dyad) rather than confined to one individual. Moments of shared positive affect are considered a core feature of love, along with mutual care/concern, and increased interpersonal synchrony in biology and nonverbal behavior (Fredrickson, 2013). Although positive affect co-experienced between and among individuals may be short-lived, such as a shared glance of affection, a greater frequency of these moments is theorized to build perceived resources (e.g., feelings of connectedness, safety, support) associated with marital quality

(Fredrickson, 2016). Even low intensity co-experienced positive affect is thought to be particularly efficient for building relationship quality relative to similarly mild positive emotions experienced individually (Fredrickson, 2016).

Research has introduced a survey measure of perceived positivity resonance (Major et al., 2018), quantified behavioral indicators of positivity resonance (Otero et al., 2019), and linked shared laughter to relationship quality (Kurtz & Algoe, 2015). No work to our knowledge has examined continuous ratings of subjective affect during interactions to test the hypotheses that moments of co-experienced positive affect predict relationship quality more than individually-experienced moments of positive affect, an individual's average level of affect, or co-experienced negative affect during interactions.

Past theory and research suggests that negative affect is a more potent predictor of marital quality than positive affect and must be offset by a high degree of positive affect for a marriage to thrive (Gottman, 1994; Gottman & Levenson, 2000; Levenson et al., 1994). However, in the case of *co-experienced* affect, some moments of co-experienced negative affect may be beneficial. Co-experienced negative affect that arises as a result of constructive or supportive relational processes (e.g., empathizing with a partner's distress) may potentially weaken negative associations between co-experienced negative affect and marital quality. In contrast, co-experienced positive affect is theorized to be consistently beneficial (Fredrickson, 2016). Thus, co-experienced positive affect may be even more predictive of relationship quality than co-experienced negative affect.

The importance of co-experienced affect during marital interactions may be shaped by the topic of conversation (e.g., a conflict versus pleasant topic). Conceivably, the topic of conversation might even render co-experienced affect inert (e.g., given the

potential rarity of co-experienced positive affect during conflict, more frequent co-experienced positive affect may only be predictive of marital quality during discussions of pleasant or neutral topics, but not during disagreements). However, positivity resonance theory suggests that satisfied couples generate more moments of co-experienced positive affect, even in the context of a conflictual conversational topic.

To determine the presence or absence of co-experienced affective states, moment-to-moment across varied topics, continuous subjective affective reports are required from each group member across multiple interactions. These continuous affective reports must reflect whether each group member's affect is positive or negative at each moment during the interactions. The current study takes advantage of a unique archival dataset that meets these criteria at the dyadic level (Levenson et al., 1993). Wives and husbands in long-term marriages provided continuous subjective reports of affective valence across three conversational topics: events of the day, conflict, and a pleasant topic. For each conversation, we had three key hypotheses. First, we hypothesized that (1a) more time spent co-experiencing positive affect will predict higher marital quality, and that (1b) individually-experienced positive affect or individual's overall average level of affect will add little explanatory value beyond co-experienced positive affect. Second, we hypothesized that (2a) more time spent co-experiencing negative affect will predict lower marital quality, and that (2b) individually-experienced negative affect or individual's overall average level of affect will add little explanatory value beyond co-experienced negative affect. Finally, we hypothesized that (3) co-experienced positive affect will outperform co-experienced negative affect in predicting marital quality.

Method

Participants

Participants were drawn from a longitudinal study of 156 heterosexual married couples. The current sample (*N*=150) consists of a subset who provided affect ratings for three conversational topics (*Mean years of marriage* =30.37; *Mean age*= 52.79; see Table S1 for additional demographics and Section 1 of Supplemental Content for sampling and recruitment details and a list of prior publications using this dataset). Participants were primarily White (86%; 7% Black; 2% Hispanic; 4% Asian; 1% other), relatively well-off socioeconomically, and with children (95% had at least one child). The University of California, Berkeley Committee for the Protection of Human Subjects approved procedures.

Procedure

Data was collected at four time points over the course of 20 years (Time 1: 1989/90; Time 2: 1995/96; Time 3: 2001/02; Time 4: 2008/09). Our primary analyses focus data collected at Time 1. Couples completed questionnaires and a laboratory session based on a well-validated protocol for studying emotion during interactions (Levenson & Gottman, 1983). Couples engaged in three 15-minute conversations, each on a different topic: (a) events of the day; (b) an ongoing conflict in the marriage; (c) or a mutually agreed upon pleasant topic.

Subjective affect. Several days after the laboratory session, participants returned to the laboratory and individually watched video-recordings of their conversations while using a rating dial to provide continuous ratings of how they felt during the interactions. Participants manipulated a rating dial that traversed an 180^{o} path, with the dial pointer moving over a 9-point scale anchored by the legends “extremely negative” (1) and

"extremely positive" (9), with a line labeled "neutral" in the middle (5).[1] Spouses were instructed to change the position of the dial as often as necessary so that it always represented how they felt during the interaction (Ruef & Levenson, 2007). The average dial position was computed every second. For each spouse, this resulted in a second-by-second time-series reflecting affective valence during each 15-minute conversation. This procedure for obtaining continuous self-reported affect is a well-validated; Gottman & Levenson, 1985).

Data Reduction

Cumulative *seconds of co-experienced positive affect* for each conversation was determined as the number (sum) of seconds in which both partners reported experiencing positive affect (>=5 on the rating dial at the same time)[2].

Cumulative *seconds of co-experienced negative affect* for each conversation was determined as the number (sum) of seconds in which both partners reported experiencing negative affect (<=5 on the rating dial at the same time).

Cumulative *seconds of individually-experienced positive affect* for each conversation was determined separately for husbands and wives as the number (sum) of

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[1] The rating dial mirrors the affective circumplex model of valence, in which positive and negative affect fall along a unidimensional scale (Posner et al., 2005).

[2] We used the neutral line (5 on the rating dial) as a threshold for determining positive and negative affect because positivity resonance theory argues that even low intensity co-experienced positive affect is relevant for relationship quality. Given the nature of the rating dial (i.e., participants necessarily move through the neutral point on the rating dial as they shift from negative to positive affect, without necessarily feeling neutral), and given that neutral affect can be interpreted positively or negatively, we allowed seconds rated as neutral (5) to be considered positive or negative for both shared and unshared affect. This analytic choice additionally reduces dependency in the data (e.g., for each spouse, each second is *not* necessarily coded as one of 4 affect categories that together sum to 900 seconds). For completeness, we repeated analyses without including seconds rated as neutral in calculations of positive and negative affect categories and found similar results (see Supplemental Section 2 and Tables S2 & S3).

seconds in which the individual reported experiencing positive affect (>=5 on the rating dial), while their partner did not.

Cumulative *seconds of individually-experienced negative affect* for each conversation was determined separately for husbands and wives as the number (sum) of seconds in which the individual reported experiencing negative affect (<=5 on the rating dial), while their partner did not.[3]

Individual's average level of affect for each conversation was determined separately for husbands and wives as their average rating dial level for each of the 15-minute conversations.

For each conversation, couples were excluded from analyses if husbands or wives were missing more than 15% of rating dial data for that conversation (this occurred for a few couples due to technical issues), resulting in slightly smaller sample sizes per conversational topic ($N_{conflict}$=147; N_{events}=146; $N_{pleasant}$=148).

Survey Measures

Marital quality was assessed before couples visited the laboratory using two well-validated self-report inventories: (a) the 15-item Marital Adjustment Test (e.g., "Describe the degree of happiness, everything considered, of your present marriage…"; Locke & Wallace, 1959), and (b) the 22-item Marital Relationship Inventory (e.g., "How happy would you rate your marriage?"; Burgess, Locke, & Thomes, 1971). Consistent with past research (e.g., Carstensen et al., 1995) and to reduce Type 1 errors, we averaged the measures separately for husbands and wives to capture each spouse's perceived marital

[3] To maintain statistical independence of the affect measures, the latter two variables capture seconds of unshared affect rather than the total seconds of positive or negative affect that each individual experienced. For completeness, we repeated all analyses using each individual's total seconds of positive or negative affect (in place of individuals' unshared affect). Results were comparable (see Supplemental Section 3 and Table S4).

quality. Measures showed high internal consistency (alpha range=.80-.86), and husband's and wive's scores were highly correlated (see Supplemental Section 4).

Statistical Analyses

To account for dependence in the data, a series of random intercepts multi-level models were constructed with the R lme4 package, with individuals nested within dyads. Dyads were treated as indistinguishable in the primary models based on preliminary empirical analyses (see Supplemental Section 4). P-values were derived with the lmerTest package (Satterthwaite's degrees of freedom method). For every model, marital quality served as an individual-level dependent variable. All variables were z-scored so that coefficients would be standardized. For each of the 3 conversational topics, we ran 5 models (labeled to correspond to hypothesis labels). Model 1a assessed whether the number of seconds of co-experienced positive affect (dyad-level predictor) was associated with individuals' marital quality. In Model 1b, we added individuals' average level of affect and seconds of individual positive affect as individual-level predictors to Model 1a. Next, we addressed co-experienced negative affect. Model 2a assessed whether seconds of co-experienced negative affect (dyad-level predictor) was inversely associated with individuals' marital quality. In Model 2b, we added individuals' average level of affect and seconds of individual negative affect as individual-level predictors to Model 2a. Next, in Model 3 we compared seconds of co-experienced positive affect to seconds of co-experienced negative affect by including these variables as joint predictors of individuals' marital quality. Finally, we conducted dominance analyses (Luo & Azen, 2013) to examine the relative importance of all affect variables in the prediction of marital quality.

Because data are archival in nature, the sample size was pre-determined. However, we calculated power to detect the fixed effect of co-experienced affect in a random intercept model based on Monte Carlo simulations (Green & MacLeod, 2016). For a sample of 146 (our smallest sample size), we had 89.5% power [95% CI: 87.43, 91.33; 1000 simulations] to detect a small effect size of .2.

Results

Table 1 displays means and standard deviations for affective predictors. As expected, the number of each type of affective moment tracked conversational context (e.g., positive moments were highest during the pleasant topic, negative moments were highest during conflict). The sole exception was individually-experienced moments of positive affect, which were relatively higher during conflict. Note that co-experienced affect was not consistently more or less common than individually-experienced affect. Table S5 in Supplemental Content Section 5 displays correlations among all variables.

Table 2 displays the results by conversation topic.[4] Regarding positive affect, as hypothesized, results from Model 1a indicate that more seconds of co-experienced positive affect were associated with higher marital quality for each conversation topic. In Model 1b, co-experienced positive affect remained a significant predictor of marital quality, whereas individually-experienced positive affect and individuals' average level of affect were not significantly associated with marital quality. Regarding negative affect, results from Model 2a suggest that more seconds of co-experienced negative affect were associated with lower marital quality for each conversational topic. In Model 2b, co-experienced negative affect remained significantly associated with marital quality for the conflict and pleasant conversations, and marginally significant for the events

[4] Additional test statistics are available from Supplemental Section 5, Table S6.

conversation. Again, as for positive affect, individually-experienced negative affect and individuals' average level of affect were not significantly associated with marital quality.

When comparing co-experienced positive affect to co-experienced negative affect in Model 3, for the events and conflict topics, co-experienced positive affect had a significant relationship with marital quality whereas co-experienced negative affect did not. However, for the pleasant topic, co-experienced positive and co-experienced negative affect each independently related to marital quality.

Given the number of models tested (15 total; 5 for each of the 3 conversational topics), we adjusted *p*-values using the Benjamini-Hochberg procedure to control for a potential false discovery rate of 5% (Benjamini & Hochberg, 1995; See Supplemental Section 6, Table S7). After correcting for multiple comparisons, results for Model 3, 1b, and 2b became marginal during the events conversation (i.e., for the events conversation, co-experienced affect was only marginally predictive beyond other affect variables). However, additional formal comparisons of nested models (Models 1a versus 1b; Models 2a versus 2b) revealed that individual-level affect variables did not significantly improve model fit indices for any conversational topic, including the events conversation (See Section 6 of Supplemental for statistical details).

The pattern of results was also comparable across husbands and wives (See Section 7 of Supplemental Content). Findings were also similar when individually-experienced affect and average dial were included in separate models, and when an individual's positive to negative affect ratios were as used as an alternative metric of individual affect (See Supplemental Content Section 7 and Table S8). Moreover, we conducted three dominance analyses (one for each conversational topic) to examine

which variables were the best predictors of marital satisfaction. Co-experienced positive affect demonstrated greater relative importance for marital quality than all other affective predictors, followed by co-experienced negative affect (See Supplemental Section 8 and Tables S9, S10, and S11).

Finally, to explore potential longitudinal effects of co-experienced positive affect on marital quality, we examined whether co-experienced positive affect predicts husbands' and wives' marital quality at each of the following time-points. We found that co-experienced positive affect was significantly or marginally associated with marital quality at every later time-point (5 years later, 10 years, and 15 years later) for each of the conversations. However, these effects generally became non-significant after controlling for initial marital quality. The one exception was co-experienced positive affect during the events conversation, which predicted marital quality 10 years later, even after accounting for initial marital quality. This pattern of effects may result from stability in marital quality across time (see Supplemental Section 9 for details)[5].

Discussion

The current study examined whether dyadic, co-experienced positive and negative affect during marital interactions are better predictors of individuals' perceived relationship quality than individually-experienced moments of affect and individuals' average level of affect during these same conversations. Results suggest co-experienced affect was not simply a better predictor of marital quality, but rather, across models, individual level affect factors added little to no explanatory value beyond co-experienced affect. Thus, when individuals consider the quality and nature of their interpersonal

[5] We present figures of raw data (associations between co-experienced affect variables and marital quality) in Supplemental Section 10.

relationships, they may afford greater weight to moments of co-experienced affect than their own individual affect.

Results suggest that more co-experienced positive affect is associated with better relationship quality, whereas more co-experienced negative affect is associated with worse relationship quality. Although negative affect during interactions is typically viewed as detrimental, some instances of co-experienced negative affect may be beneficial during interactions (e.g., sharing a partner's distress). In contrast, co-experienced positive affect is theorized to be consistently beneficial for relationship quality. This may help to explain why co-experienced positive affect generally outperformed co-experienced negative affect. Only for the pleasant topic conversation did co-experienced negative affect become an additional significant predictor of marital quality. We speculate that when co-experienced negative affect seeps into contexts that are normatively pleasant it becomes especially diagnostic.

These findings provide support for collective emotion theories that emphasize the power of macro-level affect beyond individually-experienced affect (Goldenberg et al., 2020) and join a broader body of evidence linking shared positive affect and interpersonal synchrony with affiliation and social attachments in dyads and groups (Algoe et al., 2013; Gable et al., 2004; Hove & Risen, 2009; Mauss et al., 2011; Páez et al., 2015; Rennung & Göritz, 2016). Findings also provide empirical support for a critical claim of Positivity Resonance Theory (Fredrickson, 2016), that positive affect co-experienced between individuals is more strongly linked with relationship quality than is positive affect experienced solely by individuals. Lastly, findings provide novel information regarding the affective features of interpersonal interactions that are

associated with better relationship quality, which points to potential targets for future intervention studies (e.g., examining whether increasing brief moments of co-experienced positive affect promotes better relationship quality).

Several study limitations are worth mentioning. First, these findings are correlational in nature. We cannot make conclusions regarding the causal direction of effects. Although we suspect that co-experienced affect may be both cause and consequence of perceived relationship quality, such reciprocal causation remains to be tested. Additionally, participants retrospectively rated their affect experienced during the conversation. This method for capturing continuous retrospective ratings cued by video-recall has been validated in a number of ways (e.g., physiology when viewing the interaction tracks physiology during the original conversation, suggesting that participants are reliving their emotional experience; Gottman & Levenson, 1985) and retrospective ratings of emotion are known to contain accurate information about momentary emotion reports (Barrett, 1997). However, appraisals of affect may also be influenced by a host of factors, and affect ratings may not map perfectly onto the temporal resolution of participants' actual subjective affect during the conversation. Moreover, the nature of the rating dial assumes that participants feel either positive, negative, or neutral throughout the conversation, and does not allow for more nuanced mixed emotional states. Second, our analyses examined the overall amount of indidually experienced affect during interactions. We did not capture specific types of individually-experienced or discordant affect that may have strong predictive value for relationship quality (e.g., individually experienced affect that compensates or regulates a partner's negative emotions; Gottman et al., 1998; Bloch, Haase, & Levenson, 2014; Goldenberg,

Enav, Halperin, Saguy, & Gross, 2017). Finally, the present results were found in a sample of long-term married couples. Although both collective emotions theory and positivity resonance theory suggest that these findings will generalize to other groups and relationships, we cannot be sure from the current data that our conclusions will generalize to other dyadic or group relationships (e.g., friendships, classmates) or samples of married couples who differ in length of marriage, gender, income, marital quality, etc. Future research is needed to replicate and extend these findings.

In conclusion, findings suggest co-experienced dyadic affective moments are more relevant to relationship quality than are individually-experienced affect. Co-experienced positive affect in particular appears to be a robust predictor of marital quality. Future research is needed to replicate and extend these findings, examine the role that co-experienced affect plays in the development and maintenance of social relationships, and understand the ways in which individuals integrate their partners' affective experiences into their own judgments of relationship quality.

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Table 1.

Means and standard deviations for all predictor variables.

	Conflict Conversation		**Events of the Day**		**Pleasant Conversation**	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**
Seconds of Co-experienced Positive Affect	260.91	229.60	523.66	227.92	662.91	216.77
Seconds of Co-experienced Negative Affect	291.06	250.15	96.25	128.61	43.76	86.79
Seconds of Individual Positive Affect Husbands	208.83	208.58	162.87	181.05	114.18	151.24
Seconds of Individual Positive Affect Wives	170.47	178.69	135.16	158.51	87.7	140.30
Seconds of Individual Negative Affect Husbands	167.01	176.7	146.59	166.63	97.91	145.38
Seconds of Individual Negative Affect Wives	210.64	205.86	177.77	185.55	128.96	157.78
Average Level of Affect Husbands	4.96	1.03	5.70	0.79	6.09	0.81
Average Level of Affect Wives	4.81	1.14	5.70	1.07	6.17	0.98

Table 2.

Results from dyadic multi-level models (individuals nested within dyads) predicting husbands' and wives' individual reports of marital quality from experienced affect of various forms.

	Conflict Conversation		**Events Conversation**		**Pleasant Conversation**	
	B	*p*	*B*	*p*	*B*	*p*
Positive Affect						
Model 1:						
Seconds of Co-experienced Positive Affect	0.298	<.001***	0.239	.003**	0.346	<.001***
Model 2:						
Seconds of Co-experienced Positive Affect	0.266	.004**	0.185	.046*	0.342	<.001***
Seconds of Individual Positive Affect	-0.001	.898	-0.011	0.80	0.021	.580
Individual Average Level of Affect	0.047	.504	0.088	0.14	0.032	.514
Negative Affect						
Model 3:						
Seconds of Co-experienced Negative Affect	-0.241	.002**	-0.184	.021*	-0.343	<.001***
Model 4:						
Seconds of Co-experienced Negative Affect	-0.212	.030*	-0.146	.081+	-0.324	<.001***
Seconds of Individual Negative Affect	-0.004	.941	-0.013	0.757	-0.021	.594
Individual Average Level of Affect	0.046	.527	0.073	0.235	0.040	.436
Positive vs. Negative Affect						
Model 5:						
Seconds of Co-experienced Positive Affect	0.259	.020*	0.212	.048*	0.214	.025*
Seconds of Co-experienced Negative Affect	-0.054	.623	-0.038	0.716	-0.207	.030*

Table Note. ***p<.001; ** p < .01; * p < .05; + p<.10, uncorrected

Supplemental Content

Section 1: Prior publications and additional demographics

Data from this larger, NIA-supported study (R01 AG007476) have been reported elsewhere (Bloch et al., 2014; Carstensen et al., 1995; Haase et al., 2013, 2016; Holley et al., 2013; Levenson et al., 1993, 1994; Otero et al., 2019; Pasupathi et al., 1999; Seider et al., 2009; Shiota & Levenson, 2007; Yuan et al., 1998) and will continue to support other and related investigations. The initial goal of the study was to recruit a sample of older and middle-aged couples who were representative of the ethnic, economic, and religious makeup of the Berkeley, California area. To minimize systematic biases, the experimental sample was constructed in a three-stage process including: 1) a random telephone surveys conducted by a survey research company to asses the population characteristics of people living in the area related to marital satisfaction, age, ethnicity, religion, and socioeconomic status, 2) an initial screening of prospective subjects in which prospective subjects completed a questionnaire packet, and 3) recruiting couples from the pool of prospective subjects who met selection criteria that were established based on the results of the random survey.

Prospective subjects were recruited by way of advertisements in newspapers, radio, newsletters, bulletins, and advertisements on flyers and placards. A total of 960 prospective couples were screened to secure the final experimental sample. Couples were recruited within four categories on the basis of age and marital satisfaction (a) middle-aged satisfied, b) middle aged dissatisfied, c) older satisfied, and d) older dissatisfied. Middle aged couples needed to be married at least 15 years with wives between the ages of 40 and 50, and older aged couples needed to be married at least 35 years with wives between the ages of 60 and 70. Locke Wallace (Locke & Wallace, 1959) marital satisfaction scores from the initial stage 1 telephone survey were used to establish the selection criteria based on marital satisfaction. Couples were required to live within a 10-mile radius of the University of California, Berkeley. To reflect the modal long-term marriages of the Bay Area observed in the phone screening, couples were required to be within 5 years of age, marital satisfaction scores must fall within 20 points of each other, the primary wage earner must not have retired, neither spouse could be an alcoholic, and English had to be the native language or language customarily spoken in the home. Researchers were generally successful in having the compositions of the sample match the demographic criteria establish in the random telephone survey in terms of age, satisfaction, socioeconomic status, and religion, however, Caucasians were oversampled, with a 17% greater representation of Caucasians compared to the original target. Of the 156 couples in the sample, 155 of the couples were in first marriages, and childless couples were quite rare. Additional sampling and recruitment details have been reported previously (Levenson et al., 1993)

Previous studies using this dataset have examined subjective affect ratings during interactions (Bloch et al., 2014; Levenson et al., 1994). Bloch et al. (2014) examined down-regulation of negative emotion in relation to marital satisfaction, and found that greater down-regulation of wives' subjective affect related to greater marital satisfaction. Levenson (1994) compared satisfied and dissatisfied couples' in terms of their level of positive affect, negative affect, and positive and negative affect reciprocity using a median split of couple's averaged marital satisfaction scores. Based on hypotheses related to reciprocity (i.e., the extent to which one partner's affect influences the other), they averaged subjective affect every ten seconds and examined 0 lag and 1 lag correlations

between partners affect using higher intensity threshold cutoffs for positive and negative affect reciprocity (greater than or equal to 6 and greater than or equal to an individual z-score of .5 for positive affect, less than or equal to 4 and less than or equal to an individual z-score of -.5 for negative affect). These studies found that satisfied couples had greater positive affect and lower negative affect on the rating dial. Positive affect reciprocity was *not* related to marital satisfaction, and negative affect reciprocity was lower for more satisfied couples during the conflict conversations only. No prior studies using this sample have addressed the current hypotheses that total seconds of co-experienced affect relate to marital satisfaction, nor have any studies compared co-experienced or shared affect with affect experienced individually to assess which is more related to marital satisfaction, or compared co-experienced positive and negative affect.

Table S1.

Participant Demographics.

	Total (*n*=150)			
	Mean	**SD**	**Minimum**	**Maximum**
Years of marriage	30.15	10.15	15	48
Marital satisfaction				
Husband	111.23	16.79	43.5	138
Wife	111.2	16.75	46.5	138
Age				
Husband	52.13	9.86	37	70
Wife	53.45	10,02	39	70
Years of education				
Husband	15.37	2.46	8	20
Wife	16.67	2.77	10	20

Section 2: Excluding moments rated as neutral on the rating dial

In primary analyses, we allowed seconds rated as neutral (5) to be considered positive or negative for both shared and unshared affect based on theoretical and analytic rationale. Table S2 shows the average and maximum number of seconds rated as neutral for husbands and wives during each conversation. For completeness, we conducted analyses excluding seconds rated as neutral (5) from calculations of all positive and negative affect categories. For example, *seconds of co-experienced positive affect* for each conversation was determined as the number (sum) of seconds in which both partners reported experiencing positive affect (>5 on the rating dial) for the below analysis. The pattern of results was similar (See Table S3 below), with negative affect becoming even more predictive during the positive conversation, matching our conclusion that co-experienced negative affect becomes especially diagnostic when it occurs during positive contexts.

Table S2.

Number of seconds rated as neutral (5) on the dial.

	Mean	**Max**
Conflict Conversation: Husbands	27.52	222
Conflict Conversation: Wives	32.71	330
Neutral Conversation: Husbands	31.24	492
Neutral Conversation: Wives	34.42	888
Pleasant Conversation: Husbands	18.97	177
Pleasant Conversation: Wives	23.43	385

Table S3.

Results from dyadic multi-level models (individuals nested within dyads) predicting husbands' and wives' individual marital satisfaction when seconds rated as neutral (5) are not included in any affect category.

	Conflict Conversation		**Neutral Conversation**		**Pleasant Conversation**	
	B	*p*	*B*	*p*	*B*	*p*
Positive Affect						
Model 1a.						
Seconds of Co-experienced Positive Affect	0.301	<.001***	0.197	.013*	0.315	<.001***
Model 1b.						
Seconds of Co-experienced Positive Affect	0.276	.003**	0.197	.016*	0.317	<.001***
Seconds of Individual Positive Affect	0.000	.988	0.035	.260	0.025	.434
Individual Average Level of Affect	0.038	.596	0.058	.159	0.071	.068+
Negative Affect						
Model 2a.						
Seconds of Co-experienced Negative Affect	-0.256	.001**	-0.120	.133	-0.370	<.001***
Model 2b.						
Seconds of Co-experienced Negative Affect	-0.221	.019*	-0.098	.219	-0.353	<.001***
Seconds of Individual Negative Affect	0.004	.930	-0.038	.227	-0.031	.322
Individual Average Level of Affect	0.053	.455	0.062	.134	0.071	.068+
Positive and Negative Affect						
Model 3.						
Seconds of Co-experienced Positive Affect	0.236	.024*	0.195	.049*	0.144	.113
Seconds of Co-experienced Negative Affect	-0.095	.359	-0.004	.966	-0.284	.002*

Table Note. *** p<.001, ** p < .01; * p < .05; + p<.10 uncorrected

Section 3: Individuals' Total Seconds of Positive or Negative Affect

In primary analyses, we used moments of individuals' unshared affect in Models 1b and 2b. We chose to use this in our primary analyses because an individual's total affect encompasses their number of seconds of co-experienced affect, and thus, would be dependent on their number of seconds of co-experienced affect, given that total seconds of affect can only be the same or larger than co-experienced affect. Nonetheless, we re-ran the models here using each individuals' total affect rather than unshared affect, and results were strikingly consistent with those from the main text. Specifically, in the models below (see Table S4), individuals' total seconds of positive affect were determined separately for husbands and wives as the number of seconds in which the individual reported experiencing positive affect (above neutral, >=5 on the rating dial), irrespective of their partner's affect during each 15-minute conversation. Likewise, individual total seconds of negative affect for each conversation was determined separately for husbands and wives as the number of seconds in which the individual reported experiencing negative affect (below neutral, <=5 on the rating dial), irrespective of their partner during each 15-minute conversation. Thus, these two variables capture seconds of individually experienced affect (unshared affect) plus the seconds of co-experienced affect each individual experiences. (Note: Although only Models 1b and 2b are affected by these changes, Table S4 mirrors Table 2 of the main manuscript for ease of comparison across models). These results provide additional evidence that it is moments of co-experienced affect that serve as the best correlate of marital satisfaction across contexts.

Table S4.

Results from dyadic multi-level models (individuals nested within dyads) predicting husbands' and wives' individual marital satisfaction using total affect in place of individual affect

	Conflict Conversation		Neutral Conversation		Pleasant Conversation	
	B	*p*	*B*	*p*	*B*	*p*
Positive Affect						
Model 1a.						
Seconds of Co-experienced Positive Affect	0.298	<.001***	0.239	.003**	0.346	<.001***
Model 1b.						
Seconds of Co-experienced Positive Affect	0.273	<.001***	0.199	.016*	0.311	<.001***
Individual's Total Seconds of Positive Affect	-0.009	.898	-0.013	.798	0.025	.58
Individual Average Level of Affect	0.047	.504	0.083	.140	0.028	.514
Negative Affect						
Model 2a.						
Seconds of Co-experienced Negative Affect	-0.241	.002**	-0.184	.021*	-0.343	<.001***
Model 2b.						
Seconds of Co-experienced Negative Affect	-0.207	.013*	-0.137	.096+	-0.312	<.001***
Individual's Total Seconds of Negative Affect	-0.005	.941	-0.017	.757	-0.025	.594
Individual Average Level of Affect	0.046	.527	0.069	.235	0.036	.436
Positive and Negative Affect						
Model 3.						
Seconds of Co-experienced Positive Affect	0.259	.020*	0.212	.048*	0.214	.025*
Seconds of Co-experienced Negative Affect	-0.054	.623	-0.038	.716	-0.207	.030*

Table Note. *** p<.001, ** p < .01; * p < .05; + p<.10 uncorrected

Section 4: Empirically determining whether husbands and wives should be treated as distinguishable dyads in statistical models

To determine whether dyads should be treated as distinguishable or indistinguishable in our primary models, we utilized "Dingy" (a DyadR application; Kenny, 2015), to examine whether there are differences between husbands and wives in marital satisfaction and co-experienced positive and negative affect in the three conversations. We ran the application 6 times (twice for each conversation, first using co-experienced positive affect (Model 1a) and then using co-experienced negative affect (Model 2a). "Dingy" estimates five structural equation models using the R package lavaan (Rosseel, 2012) wherein means, variances, and correlations are equal or unequal, and then compares model fits using chi-square tests. Results from these analyses suggest that means ($\chi 2$ (1) = 0.00, p = .972), and variances of variables are equal across our models ($\chi 2$ (1) = 0.00, p = .955). Allowing unequal correlations between co-experienced positive affect and marital satisfaction for husbands and wives did not improve model fit for the conflict conversation, ($\chi 2$ (1) = 0.20, p = .655), pleasant conversation, ($\chi 2$ (1) = 1.82, p = .178), and events conversation, ($\chi 2$ (1) = 0.00, p = .945). Similarly, allowing unequal correlations between co-experienced negative affect and marital satisfaction for husbands and wives did not improve model fit for the conflict conversation, ($\chi 2$ (1) = 5.05, p = .025), pleasant conversation, ($\chi 2$ (1) = 0.03, p = .859), or the events conversation, ($\chi 2$ (1) = 0.14, p = .706). Thus, these results suggest that dyads should be treated as indistinguishable.

Section 5: Correlations among variables and additional test statistics

Table S5.

	1	2	3	4	5	6	7	8	9	10
Conflict Conversation (N=147)										
1. Seconds of Co-experienced Positive Affect	1									
2. Seconds of Co-experienced Negative Affect	-.722**	1								
3. Seconds of Individual Positive Affect Husbands	-.215**	-.240**	1							
4. Seconds of Individual Positive Affect Wives	-.078	-.121	-.580**	1						
5. Seconds of Individual Negative Affect Husbands	.000	-.209*	-.561**	.969**	1					
6. Seconds of Individual Negative Affect Wives	-.147+	-.296**	.980**	-.574**	-.559**	1				
7. Average Level of Affect Husbands	.628**	-.677**	.440**	-.427**	-.379**	.480**	1			
8. Average Level of Affect Wives	.698**	-.649**	-.441**	.488**	.539**	-.399**	.271**	1		
9. Marital Satisfaction Husbands	.307**	-.293**	.029	-.006	-.006	.049	.266**	.216**	1	
10. Marital Satisfaction Wives	.286**	-.186*	-.052	-.041	-.048	-.048	.175*	.187*	.821**	1
Events of Day Conversation (N=146)										
1. Seconds of Co-experienced Positive Affect	1									
2. Seconds of Co-experienced Negative Affect	-.682**	1								
3. Seconds of Individual Positive Affect Husbands	-.548**	.245**	1							
4. Seconds of Individual Positive Affect Wives	-.359**	.046	-.457**	1						
5. Seconds of Individual Negative Affect Husbands	-.309**	-.017	-.467**	.976**	1					
6. Seconds of Individual Negative Affect Wives	-.420**	.143	.883**	-.476**	-.500**	1				
7. Average Level of Affect Husbands	.548**	-.537**	.119	-.551**	-.548**	.161+	1			
8. Average Level of Affect Wives	.630**	-.531**	-.678**	.216**	.242**	-.669**	.239**	1		
9. Marital Satisfaction Husbands	.235**	-.173*	-.174*	-.049	-.025	-.081	.077	.150+	1	
10. Marital Satisfaction Wives	.238**	-.191*	-.230**	-.001	.032	-.159+	.054	.239**	.821**	1
Pleasant Topic Conversation (N=148)										
1. Seconds of Co-experienced Positive Affect	1									
2. Seconds of Co-experienced Negative Affect	-.636**	1								
3. Seconds of Individual Positive Affect Husbands	-.592**	.16+	1							
4. Seconds of Individual Positive Affect Wives	-.558**	.278**	-.257**	1						
5. Seconds of Individual Negative Affect Husbands	-.512**	.201*	-.268**	.972**	1					
6. Seconds of Individual Negative Affect Wives	-.572**	.145+	.973**	-.243**	-.273**	1				
7. Average Level of Affect Husbands	.475**	-.442**	.058	-.565**	-.575**	.055	1			
8. Average Level of Affect Wives	.599**	-.416**	-.640**	-.014	.043	-.672**	.130	1		
9. Marital Satisfaction Husbands	.376**	-.346**	-.310**	-.041	.005	-.297**	.098	.323**	1	
10. Marital Satisfaction Wives	.314**	-.338**	-.302**	.042	.083	-.297**	.073	.362**	.821**	1

Table S6.

Additional test statistics from primary analyses (results from multi-level models predicting husbands' and wives' individual reports of marital satisfaction from experienced affect of various forms).

	Conflict Conversation				
	B	*SE*	*t*	*p*	*95% CI*
Positive Affect					
Model 1a:					
Seconds of Co-experienced Positive Affect	0.298	0.076	3.938	<.001***	[0.15, 0.45]
Model 1b:					
Seconds of Co-experienced Positive Affect	0.266	0.092	2.871	.004**	[0.08, 0.45]
Seconds of Individual Positive Affect	-0.001	0.049	-0.129	.898	[-0.1, 0.09]
Individual Average Level of Affect	0.047	0.071	0.670	.504	[-0.09, 0.19]
Negative Affect					
Model 2a:					
Seconds of Co-experienced Negative Affect	-0.241	0.077	-3.127	.002**	[-0.39, -0.09]
Model 2b:					
Seconds of Co-experienced Negative Affect	-0.212	0.097	-2.187	.030*	[-0.4, -0.02]
Seconds of Individual Negative Affect	-0.004	0.051	-0.074	.941	[-0.1, 0.1]
Individual Average Level of Affect	0.046	0.072	0.634	.527	[-0.1, 0.19]
Positive vs. Negative Affect					
Model 3:					
Seconds of Co-experienced Positive Affect	0.259	0.110	2.363	.020*	[0.04, 0.47]
Seconds of Co-experienced Negative Affect	-0.054	0.110	-0.493	.623	[-0.27, 0.16]
	Events Conversation				
	B	*SE*	*t*	*p*	*95% CI*
Positive Affect					
Model 1a:					
Seconds of Co-experienced Positive Affect	0.239	0.078	3.071	.003**	[0.09, 0.39]
Model 1b:					
Seconds of Co-experienced Positive Affect	0.185	0.092	2.010	.046*	[0.01, 0.36]
Seconds of Individual Positive Affect	-0.011	0.042	-0.257	.80	[-0.09, 0.07]
Individual Average Level of Affect	0.088	0.056	1.481	.14	[-0.03, 0.19]
Negative Affect					
Model 2a:					
Seconds of Co-experienced Negative Affect	-0.184	0.079	-2.332	.021*	[-0.34, -0.03]

Model 2b:					
Seconds of Co-experienced Negative Affect	-0.146	0.084	-1.753	.081+	[-0.31, 0.02]
Seconds of Individual Negative Affect	-0.013	0.042	-0.310	.757	[-0.1, 0.07]
Individual Average Level of Affect	0.073	0.061	1.193	.235	[-0.05, 0.19]
Positive vs. Negative Affect					
Model 3:					
Seconds of Co-experienced Positive Affect	0.212	0.107	1.989	.048*	[0, 0.42]
Seconds of Co-experienced Negative Affect	-0.038	0.107	0.365	.716	[-0.25, 0.17]

	Pleasant Conversation				
	B	*SE*	*t*	*p*	*95% CI*
Positive Affect					
Model 1a:					
Seconds of Co-experienced Positive Affect	0.346	0.074	4.684	<.001***	[0.2, 0.49]
Model 1b:					
Seconds of Co-experienced Positive Affect	0.342	0.084	4.083	<.001***	[0.18, 0.51]
Seconds of Individual Positive Affect	0.021	0.038	0.554	.58	[-0.05, 0.09]
Individual Average Level of Affect	0.032	0.049	0.653	.514	[-0.06, 0.13]
Negative Affect					
Model 2a:					
Seconds of Co-experienced Negative Affect	-0.343	0.074	-4.641	<.001***	[-0.49, -0.2]
Model 2b:					
Seconds of Co-experienced Negative Affect	-0.324	0.075	-4.305	<.001***	[-0.47, -0.18]
Seconds of Individual Negative Affect	-0.021	0.038	-0.535	.594	[-0.1, 0.05]
Individual Average Level of Affect	0.04	0.051	0.781	.436	[-0.06, 0.14]
Positive vs. Negative Affect					
Model 3:					
Seconds of Co-experienced Positive Affect	0.214	0.094	2.269	.025*	[0.03, 0.4]
Seconds of Co-experienced Negative Affect	-0.207	0.094	-2.188	.030*	[-0.39, -0.02]

Table Note. *** p<.001, ** p < .01; * p < .05; + p<.10 uncorrected

Section 6: Correction for Multiple Comparisons and Formal Comparisons of Nested Models

Given the number of primary models conducted (15 total; 5 for each of the 3 conversational topics), we used a Benjamini-Hochberg correction to control for a potential false discovery rate of 5% (Benjamini & Hochberg, 1995). We ranked *p*-values in ascending order, and computed adjusted *p*-values for each hypothesized effect based on the rank of the *p*-value, the number of tests conducted (15), and the false discovery rate (5%). Table S7 below displays *p*-values for each hypothesis in ascending order, as well as the adjusted p-values. Results for Models 1b, 2b, and 3 for the events conversation became marginal after adjusting for the false discovery rate of 5%.

Using the primary models reported in the main manuscript, we compared fit indices to assess whether adding individual-level affect improved model fit using likelihood ratio tests (LRT; Peugh, 2010). We began by comparing Model 1a (which examined whether seconds of co-experienced positive affect was associated with individuals' marital quality) and Model 1b (where we added individuals' average level of affect and seconds of individual positive affect as individual-level predictors to Model 1a) for each conversation. Adding individually-experienced positive affect and individuals' average level of affect as predictors to Model 1 did not improve model fit for any of the three conversational contexts (conflict: $\chi2(1) = 1.02$, $p = .60$; events: $\chi2(1) = 3.60$, $p = .17$; pleasant: $\chi2(1) = 1.70$, $p = .43$). Next we compared Model 2a (which assessed whether seconds of co-experienced negative affect was associated with marital quality) and Model 2b (where we added individuals' average level of affect and seconds of individual negative affect as individual-level predictors to Model 2a). As with positive affect, adding individual-level negative affect predictors did not improve model fit for any of the three conversational contexts (conflict: $\chi2(1) = 1.60$, $p = .45$: events: $\chi2(1) = 4.67$, $p = .10$; pleasant: $\chi2(1) = 2.34$, $p = .31$). Thus, individual-level affect variables did not improve model fit indices.

Table S7.

P-values (ascending order)	Hypotheses	Conversation	Benjaminin-Hochberg adjusted p-values
0.00000637	Hypothesis 1a: co-experienced positive affect	pleasant	0.00009555
0.00000765	Hypothesis 2a: co-experienced positive affect	pleasant	0.000057375
0.0000291	Hypothesis 2b: co-experienced positive affect	pleasant	0.0001455
0.0000624	Hypothesis 1b: co-experienced positive affect	pleasant	0.000234
0.000127	Hypothesis 1a: co-experienced positive affect	conflict	0.000381
0.00214	Hypothesis 2a: co-experienced positive affect	conflict	0.00535
0.00255	Hypothesis 1a: co-experienced positive affect	events	0.005464286
0.00444	Hypothesis 1b: co-experienced positive affect	conflict	0.008325
0.0195	Hypothesis 3: co-experienced positive affect	conflict	0.0325
0.0211	Hypothesis 2a: co-experienced positive affect	events	0.03165
0.0247	Hypothesis 3: co-experienced positive affect	pleasant	0.033681818
0.0296	Hypothesis 2b: co-experienced positive affect	conflict	0.037
0.0456	Hypothesis 1b:co-experienced positive affect	events	0.052615385
0.0486	Hypothesis 3:co-experienced positive affect	events	0.052071429
0.0813	Hypothesis 2b: co-experienced negative affect	events	0.0813

Section 7: Findings are consistent for husbands and wives and when individually experienced affect and average dial are included in separate models, and co-experienced affect is predictive beyond individuals' overall positive to negative affect ratio.

Despite preliminary analyses, which suggested that dyads should be treated as indistinguishable, we followed a simple method described by Kenny and colleagues (2006) for handling dyadic data within MLM when dyad members are distinguishable to assess whether the association between seconds of co-experienced affect and marital satisfaction varied as a function of gender. We examined the interaction between co-experienced positive affect and gender and co-experienced negative affect and gender for each of the 3 conversations. For co-experienced positive affect, there was no significant interaction during the conflict topic, $B = -.02$, $p = .67$, the events of the day topic, $B = .00$, $p = .95$, or the pleasant topic, $B = -.07$, $p = .19$. For co-experienced negative affect, there was no significant interaction during the events of the day topic, $B = -.02$, $p = .71$, or the pleasant topic, $B = .01$, $p = .82$. We did find an interaction for the conflict topic, $B = .11$, $p = .03$. Examining the correlation between co-experienced negative affect separately for husbands and wives revealed that the finding was consistent for women, $r = -.19$, $p = .024$, and men, but was significantly stronger for men, $r = -.29$, $p < .001$. Thus, across these 6 interactions examining differences by gender, only one interaction revealed a significant interaction by gender, yet this entailed significant effects for both husbands and wives.

We ran four additional dyadic models for each conversation (12 models), separating individually-experienced affect and individual-level average dial ratings. Table S8 below presents the results, which suggest that across models, co-experienced affect remains significantly associated with marital satisfaction, beyond the number of seconds of individually-experienced affect and an individual's average dial level. One exception, similar to findings in the main text, is that co-experienced negative affect during the events topic was only marginally related to marital satisfaction. In that same model, the average level of the dial was associated with marital satisfaction.

"Balance theories" of emotions suggest that negative affect must be offset by a higher degree of positive affect in order for marriages to thrive (e.g., Gottman & Levenson, 1992). Accordingly, we examined whether co-experienced positive and negative affect predicted marital satisfaction above and beyond an individual's ratio of positive to negative affect. Separately, for each individual, we divided husbands' and wives' positive affect by negative affect (after adding 1 second of positive and negative affect to each individual's score to avoid division by zero). Results are presented in Table S8 below.

Table S8.

Separating Individually experienced positive affect and average dial

	Conflict Conversation		Events of Day Conversation		Pleasant Conversation	
	B	*p*	*B*	*p*	*B*	*p*
Positive Affect						
Individual positive affect:						
Seconds of Co-experienced Positive Affect	0.301	<.001***	0.254	.002**	0.365	<.001***
Seconds of Individual Positive Affect	0.020	.454	0.034	.240	0.035	.263
Individual Average dial level of affect:						
Seconds of Co-experienced Positive Affect	0.271	<.001***	0.196	.017*	0.323	<.001***
Individual Average Level of Affect	0.040	.318	0.072	.061+	0.047	.241
Individual Positive to Negative Affect Ratio:						
Seconds of Co-experienced Positive Affect	0.284	<.001***	0.223	.004**	0.343	<.001***
Individual Ratio	0.000	.189	0.000	.102	0.000	.194
Negative Affect						
Individual negative affect:						
Seconds of Co-experienced Negative Affect	-0.249	<.001***	-0.180	.023*	-0.336	<.001***
Seconds of Individual Negative Affect	-0.030	.279	-0.051	.074+	-0.039	.193
Individual Average dial level of affect:						
Seconds of Co-experienced Negative Affect	-0.208	.011*	-0.140	.086+	-0.321	<.001***
Individual Average Level of Affect	0.050	.211	0.082	.034*	0.057	.155
Individual Positive to Negative Affect Ratio:						
Seconds of Co-experienced Negative Affect	-0.228	.003**	-.167	.036*	-0.339	<.001***
Individual Ratio	0.000	.145	0.047	.241	0.000	.670

Table Note. *** p<.001, ** p < .01; * p < .05; + p<.10 uncorrected

Supplemental Section 8: Dominance Analyses

In multi-level models, the significance of individual predictors can be tested when adjusting for other predictors as we did in the main manuscript. However, the standardized coefficient for any predictor (and its statistical significance) can change depending on the subset of predictors that are included in the model. Thus, the relative importance of predictors may be better determined by using dominance analysis. Dominance analysis is a method used to compare the relative importance of predictors in regression or multi-level models. Dominance analysis is conducted by comparing each predictor's additional contributions to model adequacy across all subset models. Here, we examine the relative importance of all affective variables for predicting individual marital satisfaction scores using dominance analysis. For all dominance analyses, we used the R dominanceAnalysis-package. We conducted one dyadic dominance analysis for each conversational topic (i.e., conflict, events of the day, pleasant topic) to determine the relative importance of the 5 affective predictors (co-experienced positive affect, co-experienced negative affect, individually experienced positive affect, individually experienced negative affect, and individual average level of affect) in predicting marital satisfaction. Results from the conflict, events of the day, and pleasant topic conversation are depicted in Tables S5, S6, and S7, respectively. As recommended by Luo & Azen (2013), as a measure of model adequacy for dominance analysis with multi-level models, we use a statistic proposed by Snijders & Bosker (1994) that reflects the proportional modeled variance. This statistic is appropriate for comparing both Level-1 predictors and Level-2 predictors and determining their relative importance in predicting individual scores at Level 1 (Luo & Azen, 2013).

Table S9 contains the measures of model adequacy (fit) for all subset models (different combinations of predictor variables) for the conflict conversation. The entries in the table represent the additional contribution of the predictor appearing in a column of the table to the subset model appearing in a row of the table. For example, in Table S9, the model containing only X_1 has a measure of fit of .073 while the model containing both X_1 and X_3 as predictors has a measure of fit of .074. Thus, the difference between these two values (.001) represents the additional contribution of X_3 to the model that already contains X_1, and can be found in the row labeled X_1 under the column labeled X_3. Dominance analysis consists of three levels of dominance: complete, conditional, or general, with complete dominance being the strongest form of dominance. By comparing each pair of variables in each row of the Table for which both variables have entries, the complete dominance of one predictor over another can be determined. Conditional dominance can be evaluated by comparing variables in terms of their averaged additional contributions shown in the shaded rows of the Table labeled with "k = (0, 1, 2, 3, or 4) average." General dominance can be evaluated by comparing the variables in terms of their "overall average" contribution found in the last row of the table. As seen in Table S9, co-experienced positive affect completely dominated all other variables. Table S10 displays the dominance analysis results for the events of the day topic, which suggests positive affect generally dominated all other variables. Finally, Table S11 displays the dominance analysis results for the positive conversation topic, which suggests co-experienced positive affect conditionally dominated all other variables. Also note that in each table, co-experienced negative affect generally to completely dominates all variables other than co-experienced positive affect. These findings suggest that seconds of co-experienced positive affect has the greatest relative importance for predicting marital satisfaction across conversational topics, followed by the seconds of co-experienced negative affect.

Table S9.

Dominance analysis results for husbands and wives during conflict

Subset Model	fit	X_1	X_2	X_3	X_4	X_5
***k*=0 average**		0.083	0.052	-0.001	0	0.029
X_1	0.073		-0.004	0.001	-0.001	0
X_2	0.042	0.027		-0.002	0.004	0.004
X_3	-0.011	0.085	0.052		-0.003	0.05
X_4	-0.01	0.082	0.056	-0.004		0.04
X_5	0.019	0.055	0.028	0.02	0.011	
***k*=1 average**		0.062	0.033	0.004	0.003	0.024
X_1, X_2	0.069			0	0	0
X_1, X_3	0.074		-0.005		-0.004	-0.001
X_1, X_4	0.072		-0.004	-0.003		0
X_1, X_5	0.073		-0.005	-0.001	-0.002	
X_2, X_3	0.04	0.028			0.025	0.012
X_2, X_4	0.046	0.023		0.019		0
X_2, X_5	0.046	0.022		0.006	-0.001	
X_3, X_4	-0.015	0.084	0.08			0.049
X_3, X_5	0.039	0.033	0.013		-0.005	
X_3, X_5	0.03	0.042	0.016	0.004		
***k*=2 average**		0.039	0.016	0.004	0.002	0.01
X_1, X_2, X_3	0.069				-0.002	-0.001
X_1, X_2, X_4	0.069			-0.002	-0.001	
X_1, X_2, X_5	0.068			-0.001	-0.001	
X_1, X_3, X_4	0.069		-0.003			-0.001
X_1, X_3, X_5	0.072		-0.005		-0.004	
X_1, X_4, X_5	0.072		-0.004	-0.004		
X_2, X_3, X_4	0.065	0.001				-0.001
X_2, X_3, X_5	0.053	0.015			0.012	
X_2, X_4, X_5	0.045	0.022		0.019		
X_3, X_4, X_5	0.034	0.034	0.03			
***k*=3 average**		0.018	0.005	0.003	0.001	-0.001
X_1, X_2, X_3, X_4	0.067					-0.001
X_1, X_2, X_3, X_5	0.067				-0.002	
X_1, X_2, X_4, X_5	0.067			-0.002		
X_1, X_3, X_4, X_5	0.068		-0.003			
X_2, X_3, X_4, X_5	0.064	0.001				
***k*=4 average**		0.001	-0.003	-0.002	-0.002	-0.001
X_1, X_2, X_3, X_4, X_5	0.065					
Overall Average		0.041	0.021	0.002	0.001	0.012

*Note: X_1=seconds of co-experienced positive affect; X_2=seconds of co-experienced negative affect; X_3=seconds of individual positive affect; X_4=seconds of individual negative affect; X_5=individual average level of affect.

Table S10.

Dominance analysis results for husbands and wives during events of the day

Subset Model	**fit**	X_1	X_2	X_3	X_4	X_5
***k*=0 average**		0.051	0.028	-0.005	0.007	0.022
X_1	0.033		-0.005	-0.001	-0.001	0
X_2	0.01	0.018		-0.004	0.005	0.006
X_3	-0.023	0.055	0.028		0.032	0.039
X_4	-0.011	0.043	0.026	0.021		0.015
X_5	0.004	0.028	0.011	0.012	-0.001	
***k*=1 average**		0.036	0.015	0.007	0.009	0.015
X_1, X_2	0.028			-0.001	-0.001	-0.001
X_1, X_3	0.033		-0.006		-0.004	-0.001
X_1, X_4	0.032		-0.005	-0.003		0
X_1, X_5	0.033		-0.006	-0.001	-0.001	
X_2, X_3	0.005	0.022			0.021	0.014
X_2, X_4	0.015	0.012		0.012		0
X_2, X_5	0.016	0.011		0.004	-0.001	
X_3, X_4	0.01	0.019	0.017			0.011
X_3, X_5	0.016	0.016	0.004		0.005	
X_3, X_5	0.003	0.028	0.012	0.017		
***k*=2 average**		0.018	0.003	0.005	0.003	0.004
X_1, X_2, X_3	0.027				-0.001	-0.001
X_1, X_2, X_4	0.027			-0.001		-0.001
X_1, X_2, X_5	0.027			-0.001	-0.001	
X_1, X_3, X_4	0.028		-0.003		0	
X_1, X_3, X_5	0.032		-0.006		-0.003	
X_1, X_4, X_5	0.032		-0.005	-0.003		
X_2, X_3, X_4	0.027	-0.001				0
X_2, X_3, X_5	0.019	0.006			0.007	
X_2, X_4, X_5	0.015	0.011		0.011		
X_3, X_4, X_5	0.021	0.008	0.006			
***k*=3 average**		0.006	-0.002	0.001	0	-0.001
X_1, X_2, X_3, X_4	0.026					-0.001
X_1, X_2, X_3, X_5	0.026				-0.001	
X_1, X_2, X_4, X_5	0.026			-0.001		
X_1, X_3, X_4, X_5	0.028		-0.004			
X_2, X_3, X_4, X_5	0.026	-0.002				
***k*=4 average**		-0.002	-0.004	-0.001	-0.001	-0.001
X_1, X_2, X_3, X_4, X_5	0.025					
Overall Average		0.022	0.008	0.001	0.004	0.008

*Note: X_1=seconds of co-experienced positive affect; X_2=seconds of co-experienced negative affect; X_3=seconds of individual positive affect; X_4=seconds of individual negative affect; X_5=individual average level of affect.

Table S11.

Dominance analysis results for husbands and wives during the pleasant topic

Subset Model	**fit**	X_1	X_2	X_3	X_4	X_5
***k*=0 average**		0.114	0.112	-0.002	0.011	0.03
X_1	0.110		0.02	0.003	-0.002	0.002
X_2	0.109	0.022		-0.003	0.005	0.007
X_3	-0.005	0.118	0.111		0.052	0.048
X_4	0.007	0.101	0.106	0.040		0.018
X_5	0.027	0.086	0.089	0.016	-0.001	
***k*=1 average**		0.082	0.082	0.014	0.013	0.019
X_1, X_2	0.131			0	-0.001	0.001
X_1, X_3	0.113		0.018		0.02	0
X_1, X_4	0.108		0.021	0.025		0.004
X_1, X_5	0.113		0.019	0	0	
X_2, X_3	0.106	0.025			0.017	0.01
X_2, X_4	0.113	0.016		0.009		0.002
X_2, X_5	0.115	0.017		0.001	0	
X_3, X_4	0.047	0.086	0.075			0.01
X_3, X_5	0.042	0.071	0.074		0.015	
X_3, X_5	0.025	0.087	0.09	0.032		
***k*=2 average**		0.05	0.05	0.011	0.008	0.005
X_1, X_2, X_3	0.131				0.002	0
X_1, X_2, X_4	0.13			0.003		0.001
X_1, X_2, X_5	0.132			-0.001	-0.001	
X_1, X_3, X_4	0.133		0			0.004
X_1, X_3, X_5	0.113		0.018		0.024	
X_1, X_4, X_5	0.113		0.018	0.024		
X_2, X_3, X_4	0.122	0.01				0.001
X_2, X_3, X_5	0.116	0.015			0.007	
X_2, X_4, X_5	0.115	0.016		0.008		
X_3, X_4, X_5	0.057	0.08	0.066			
***k*=3 average**		0.03	0.025	0.009	0.008	0.001
X_1, X_2, X_3, X_4	0.133					0.002
X_1, X_2, X_3, X_5	0.131				0.003	
X_1, X_2, X_4, X_5	0.131			0.004		
X_1, X_3, X_4, X_5	0.137		-0.002			
X_2, X_3, X_4, X_5	0.123	0.012				
***k*=4 average**		0.012	-0.002	0.004	0.003	0.002
X_1, X_2, X_3, X_4, X_5	0.135					
Overall Average		0.058	0.053	0.007	0.009	0.011

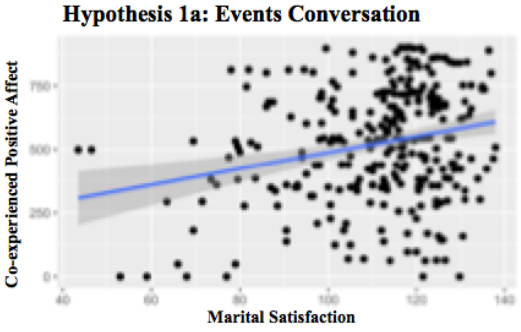
*Note: X_1=seconds of co-experienced positive affect; X_2=seconds of co-experienced negative affect; X_3=seconds of individual positive affect; X_4=seconds of individual negative affect; X_5=individual average level of affect.

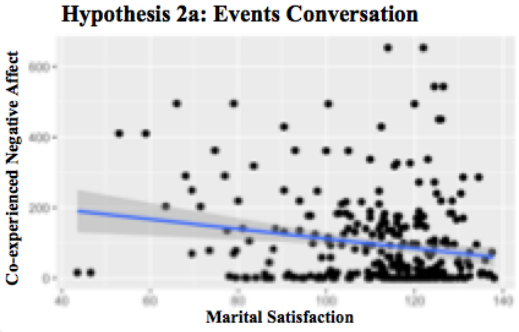
Supplemental Section 9: Longitudinal Analyses

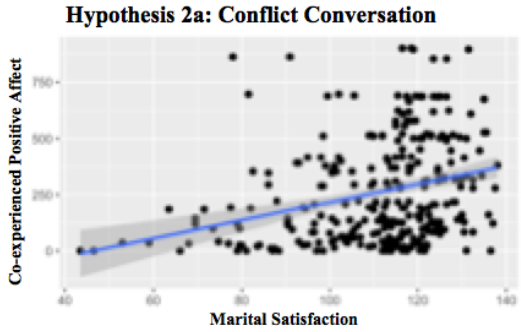
We explored whether co-experienced positive affect predicted husbands' and wives' relationship quality at each of the three later time-points for each of the three conversations. For the conflict conversation, we found that co-experienced positive affect was associated with marital quality 5 years later, β =.26, $t(125) = 3.21$, $p = .001$, 10 years later, β =.28, $t(95) = 3.01$, $p = .003$**,** and marginally 15 years later, β =.26, $t(44) = 1.84$, $p = .072$. However, none of these effects were significant after controlling for initial relationship quality at Time 1. Similarly, for the pleasant conversation, we found that co-experienced positive affect was associated with marital quality 5-years later, β =.35, $t(125) = 4.62$, $p < .001$, 10-years later, β =.22, $t(94) = 2.26$, $p = .026$**,** and marginally 15-years later, β =.29, $t(45) = 1.89$, $p = .064$, but again none of these effects were significant after controlling for relationship quality at Time 1. Finally, for the events conversation, co-experienced positive affect was again associated with marital quality 5 years later, β =.24, $t(124) = 2.96$, $p = .004$, 10 years later, β =.32, $t(94) = 3.76$, $p < .001$**,** and 15 years later, β =.35, $t(2.78) = 2.78$, $p = .007$, and the effect on co-experienced positive affect on marital quality 10 years later was significant even after accounting for initial marital quality, β =.12, $t(94) = 2.60$, $p = .011$.

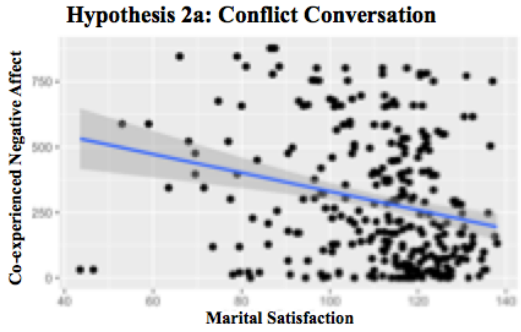
This pattern of longitudinal effects may result from stability of marital quality over time. We assessed the stability of marital quality over time by constructing a series of dyadic growth curve models within a structural equation modeling (SEM) framework using the *lavaan* package in R. All models included marital quality scores for husbands and wives at each time point. For all models, the variance of marital quality was constrained to be equal across time-points for husbands and wives; and error terms were correlated for husbands and wives at each time-point, and constrained to be equal at each time point. To evaluate model fit, we inspected chi square as an absolute fit index (being mindful of its sensitivity to sample size; Bentler & Bonett, 1980), as well as the comparative fit index (CFI) and standardized root mean squared residual (SRMR) as relative fit indices, following established guidelines (Hu & Bentler, 1999). Nonsignificant chi squared values; CFI values greater than 0.95; and SRMR values less than .08 indicated satisfactory model fit. The first model was a no-growth model, which predicts a starting value (i.e., intercept) for husbands and wives with no further change over time. The second model was a linear growth model, which expanded on the first model to include a linear slope for individuals (i.e., a linear pattern of change of marital quality over time). The third model was a latent basis model to detect potential non-linear changes. The no-growth model had adequate fit ($\chi^2(36) = 71.58$; $p < .001$; CFI = .958; RMSEA= .081), whereas the linear and latent basis models did not converge. The adequate fit of the no-growth model suggests there is stability in marital quality over time.

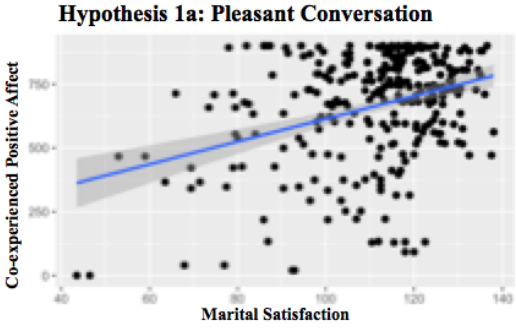
Supplemental Section 10: Scatterplots with Raw Data

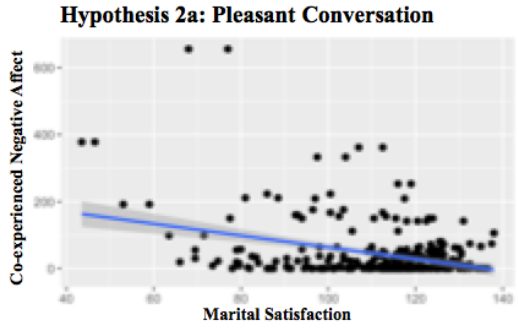












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