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## Emotion regulation predicts marital satisfaction: More than a wives' tale

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### Abstract

Emotion regulation is generally thought to be a critical ingredient for successful interpersonal relationships. Ironically, few studies have investigated the link between how well spouses regulate emotion and how satisfied they are with their marriages. We utilized data from a 13-year, 3-wave longitudinal study of middle-aged (40–50 years old) and older (60–70 years old) long-term married couples, focusing on the associations between downregulation of negative emotion (measured during discussions of an area of marital conflict at Wave 1) and marital satisfaction (measured at all three waves). Downregulation of negative emotion was assessed by determining how quickly spouses reduced signs of negative emotion (in emotional experience, emotional behavior, and physiological arousal) after negative emotion events. Data were analyzed using actor-partner interdependence modeling. Findings showed that (a) greater downregulation of wives' negative experience and behavior predicted greater marital satisfaction for wives and husbands concurrently and (b) greater downregulation of wives' negative behavior predicted increases in wives' marital satisfaction longitudinally. Wives' use of constructive communication (measured between Waves 1 and 2) mediated the longitudinal associations. These results show the benefits of wives' downregulation of negative emotion during conflict for marital satisfaction and point to wives' constructive communication as a mediating pathway.

### Keywords

emotion regulation; marriage; marital satisfaction; gender; communication behavior

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<sup>1</sup>Research has established that numerous aspects of emotional functioning are linked to the quality of marital relationships. These include emotional reactivity (greater marital satisfaction is associated with lower frequency of negative emotion and higher frequency of positive emotion experienced and expressed during marital interaction; Carstensen, Gottman, & Levenson, 1995; Gottman, Coan, Carrere, & Swanson, 1998; Levenson & Gottman, 1983, 1985; Matthews, Wickrama, & Conger, 1996; Waldinger, Schulz, Hauser, Allen, & Crowell, 2004), emotional self-awareness (greater marital satisfaction is associated with greater reported emotional self-awareness; Cordova, Gee, & Warren, 2005), and emotional empathy (greater marital satisfaction is associated with greater ability to accurately identify a spouse's emotions; Bloch, Holley, Gyurak, & Levenson, 2009; Kahn, 1970; Noller & Ruzzene, 1981).

## Emotion regulation predicts marital satisfaction: More than a wives' tale

Marriage is an important part of the social fabric of most people's lives. Indicative of this, more than 96% of Americans over age 65 have been married at least once (U.S. Census Bureau, 2009). Marital satisfaction is an important aspect of general well-being (Proulx, Helms, & Buehler, 2007). Marital dissatisfaction, on the other hand, is linked with impairments in physical and mental health (Kiecolt-Glaser & Newton, 2001) and constitutes a strong risk factor for divorce (Gottman & Levenson, 1992). Thus, whether marriages fare well or fare poorly is of great consequence.

Many factors contribute to marital satisfaction (for an overview see Bradbury, Fincham, & Beach, 2000). One determinant of good marriages is emotion regulation, which serves important social functions (Eisenberg, Hofer, & Vaughan, 2007; English, John, & Gross, 2013; Levenson, Haase, Bloch, Holley, & Seider, in press; Thompson, 1991) and, correspondingly, has been consistently linked to satisfaction in social relationships (Gross, 2002; Gross & John, 2003; John & Gross, 2004; Lopes et al., 2005). Ironically, few laboratory studies have examined emotion regulation in interpersonal contexts such as marriage (Levenson et al., in press).

### Emotion Regulation in Marriage

Marriage is often the most intimate adult relationship, and, thus, it is a crucible both for emotion (Shaver, 1987) and for emotion regulation (Levenson et al., in press). When couples encounter strongly negative emotional events (e.g., anger arising from disagreements, disappointments, and perceived betrayals) they often fall into a primitive, survival-oriented mode of interaction. In these interactions, spouses repeatedly attempt to justify their own behavior; criticize the other spouse in harsh, contemptuous ways (Gottman, 1994); make broad, negative attributions (Bradbury & Fincham, 1990); and engage in non-productive cycles of demand-withdraw behaviors (Christensen, 1988). Emotion regulation allows couples to escape from these negative states. Each spouse's regulatory activities can serve to help reduce their own emotional arousal as well as that of their partner (i.e., co-regulation, Coan, 2008; Diamond & Aspinwall, 2003; Kappas, 2011; Levenson et al., in press). If emotion regulation attempts are successful, couples enter a state of lower emotional arousal that is more conducive to effective communication behaviors (Isen, 1999; Wile, 2002), to repairing damage, and, perhaps ultimately, to resolving the underlying conflict.

Despite the ubiquity of these regulatory processes in marriage, few studies have examined emotion regulation in couples *in vivo*. Studies exploring the links between interpersonal emotion regulation processes and relationship satisfaction have also been rare but existing studies suggest that the association is strong. For example, in laboratory studies of marital interaction, couples' de-escalation of negative affect during marital conflict has been found to predict marital stability over time (Gottman, Coan, Carrere, & Swanson, 1998). Gottman and Levenson (1992) found that couples demonstrating a high ratio of positive to negative emotional behaviors during a conflict interaction had higher marital satisfaction. Conversely, inertia (the tendency to remain in a negative emotional state) has been linked with marital distress (Greene & Anderson, 1999). Consistent with these findings, negative affect reciprocity (chains of one spouse responding in kind to the other's negative emotion)

has emerged as one of the most reliable correlates of relationship dissatisfaction across research laboratories (Gottman, 1994).

Outside of the realm of marital satisfaction, emotion regulation ability has been linked to myriad other indicators of positive social functioning including adaptive attachment style, greater peer-rated likeability and sharing of emotions (Gross, 2002; Gross & John, 2003; John & Gross, 2004), greater social support, closeness to others, and social satisfaction (Salvatore, Kuo, Steele, Simpson, & Collins, 2011; Srivastava, Tamir, McGonigal, John, & Gross, 2009), greater interpersonal sensitivity, prosocial tendencies, and reciprocal friendship (Lopes, Salovey, Cote, & Beers, 2005), greater authenticity in social relationships (Gross & John, 2003), and better quality of interpersonal coordination and feelings of rapport to strangers (Butler, Egloff, Wilhelm, Smith, Erickson, & Gross, 2003). In aggregate, these findings support the major hypothesis of the present study, namely that greater emotion regulation (and especially greater downregulation of negative emotion) will be associated with higher levels of marital satisfaction.

**Differences between husbands and wives**—Marital research has revealed many gender-specific effects (Baucom, Notarius, Burnett, & Haefner, 1990). In the realm of emotion regulation, wives are often perceived and behave as the “capable regulators” in marriages (Ball, Cowan, & Cowan, 1995), and as more responsible for and competent at regulating the affective balance in marriage (Gottman & Levenson, 1988, 1992; Nolen-Hoeksema & Jackson, 2001; see also Ginsberg & Gottman, 1986). Based on these findings, wives’ emotion regulation might be particularly important for marital satisfaction – their own as well as their husbands’.

There is also evidence supporting the opposite conclusion that husbands’ emotion regulation is most important for marital satisfaction. Men have been proposed to be particularly sensitive to stress in marriage because of their lower tolerance for prolonged negative emotional states (Gottman & Levenson, 1988; Levenson, Carstensen, & Gottman, 1994). Moreover, husbands’ negativity seems to impact wives more than wives’ negativity impacts husbands (Ferrer & Nesselroade, 2003; Gilbert, Fiske, & Lindzey, 1998; Noller & Fitzpatrick, 1988). During marital interaction, husbands’ negative affect toward wives is (a) often reciprocated by wives (Notarius & Johnson, 1982), and (b) predicts declines in wives’ marital satisfaction (Huston & Vangelisti, 1991; Huston & Chorost, 1994). In these studies, wives’ negative affect does not appear to similarly affect husbands’.

Hence, the existing evidence base does not support a specific hypothesis with regard to whether husbands or wives’ emotion regulation may be more important for marital satisfaction. This was explored as a research question in the present study.

**Role of constructive communication**—During conflict, constructive communication (Heavey et al., 1996) refers to using communication behaviors that involve negotiation, mutual expression, and discussion. These collaborative (Wile, 2002) and productive (Isen, 1999) forms of communication are more likely to emerge in the context of lower emotional arousal, or when couples have escaped from negative emotional states and emotional equilibrium is restored. Constructive communication has also been linked with marital

satisfaction (Noller & Feeney, 2002; Weiss & Heyman, 1997). Because of its associations with both emotion regulation and marital satisfaction, constructive communication is a good candidate for mediating the hypothesized association between downregulation of negative emotion and marital satisfaction.

### Measuring emotion regulation

Emotion regulation involves increasing, maintaining, or decreasing one or more components of an emotional response, including experience, behavior, and physiology (Gross, 1999). In the literature on emotion regulation, a number of measures have emerged. These differ along several key dimensions: (a) individual or interpersonal; (b) self-report, behavioral, or physiological; and (c) ability or practices.

**Individual or interpersonal**—Most previous laboratory studies of emotion regulation have focused on single individuals, typically exposing them to standardized emotional stimuli (e.g., films, slides, or music, Gross & Levenson, 1993; Richards & Gross, 1999; Tamir & Ford, 2009). A far smaller number of studies have measured emotion regulation in interpersonal contexts (e.g., Butler et al., 2003; Yuan, McCarthy, Holley, & Levenson, 2010). Single subject paradigms using standardized emotional stimuli afford good experimental control, but they cannot capture the rich interpersonal dynamics that define the contexts in which most emotion regulation occurs (Aldao, 2013; Coan, 2008; Diamond & Aspinwall, 2003; Levenson et al., in press). Rather, assessment of interpersonal emotion regulation requires research designs that evaluate both partners' regulatory behaviors and measure the effects these behaviors have on both partners (Butler, 2011; Overall & Simpson, 2013).

**Self-report, behavioral, or physiological**—Most studies of emotion regulation have employed self-report measures that assess subjects' beliefs about emotion regulation (e.g., Gross & John, 2003; Egloff et al., 2006). Other studies have used more objective measures, including assessment of emotional experience, behavior, physiology, or neural activation (e.g., Gross & Levenson, 1993; Jackson et al., 2003; Mauss et al., 2006). Self-report measures have the advantage of being easier to administer than these other kinds of measures; however, self-presentational and attribution response biases may limit their validity (c.f., Robinson & Clore, 2002).

**Ability or practices**—Most experimental studies have assessed regulatory ability, explicitly instructing participants as to how and when to regulate their emotions (e.g., Gross & Levenson, 1993; Shiota & Levenson, 2009). A smaller number of studies have assessed regulatory practices, examining how participants spontaneously regulate their emotions when exposed to subtle social cues (e.g., Hagemann, Levenson, & Gross, 2006; Mauss, Cook, & Gross, 2007). Assessment of abilities allows for tight experimental control because all participants are compared under the same conditions. Assessment of practices does not afford this level of experimental control, but does allow for greater ecological validity by mirroring the kinds of real world conditions in which emotion regulation typically occurs (Levenson et al., in press). There is evidence that measures of abilities and practices reflect the activity of different neural circuits. For example, studies of neurological patients show

that different kinds of neurological damage can differentially affect the two kinds of measures (Goodkind, Gyurak, McCarthy, Miller, & Levenson, 2010).

## The Present Study

To examine the association between emotion regulation and marital satisfaction, we analyzed data from a 13-year longitudinal study of middle-aged and older couples in long-term marriages (Levenson, Carstensen & Gottman, 1993, 1994). We focused on the downregulation of negative emotion, a form of emotion regulation critical for preserving interpersonal relationships (Levenson et al., in press). We attempted to maximize ecological validity by assessing emotion regulation while spouses engaged in unrehearsed discussions of an area of conflict in their relationships, a context that is familiar to most all couples and one where both emotion and emotion regulation are typically abundant. In terms of the variations in ways that emotion regulation has been measured in previous studies (see discussion above), the present study was: (a) interpersonal (regulation was measured during couples' interactions); (b) assessed self-report, behavior, and physiology (all measured continuously during the interactions); and (c) assessed regulatory practices (couples were not explicitly instructed to regulate their emotions). In addition, the data were longitudinal, collected over a 13-year period, thus enabling determination of both concurrent and prospective associations.

Our primary hypothesis was that higher levels of downregulation of negative emotion would predict higher levels of marital satisfaction both concurrently and longitudinally. We explored specificity in this association in terms of (a) gender (i.e., husbands and wives, examining both within- and cross-spouse associations) and (b) component of emotional response (i.e., experience, behavior, and physiology). In addition, because of the important role that constructive communication has played in both emotion regulation and marital satisfaction, we explored its role as a possible mediator of the hypothesized association between the downregulation of negative emotion and marital satisfaction. We examined (a) the robustness of our findings by controlling analyses for two aspects of emotion reactivity, operationalized as the number of negative emotion events during the discussion and overall levels of negative emotion (building on prior research, Gottman & Levenson, 1992; Levenson & Gottman, 1985) and (b) whether findings generalized across the middle-aged and older subject cohorts.

## Method

### Participants

We analyzed data from a sample of 82 middle-aged heterosexual married couples (Wave 1 age in years:  $M = 43.95$ ,  $SD = 2.97$ ; length of marriage in years:  $M = 21.7$ ,  $SD = 3.4$ ) and 74 older couples (Wave 1 age in years:  $M = 62.12$ ,  $SD = 3.04$ ; length of marriage in years:  $M = 40.7$ ,  $SD = 3.6$ ) participating in a longitudinal study of long-term marriages. The sample was recruited from the Berkeley, California area to be representative of the demographics of that area as determined by a random telephone survey. The resulting sample was primarily Caucasian (86%; 4% Black; 3% Hispanic; 3% Asian; 4% other), Protestant or Catholic (62%), relatively well-off socioeconomically, and with children (96% of couples had at least

one child; one additional middle-aged couple was expecting their first child). Full details of the sampling and recruitment procedures have been reported previously (Levenson, Carstensen, & Gottman, 1993).<sup>2</sup>

## Procedure

We analyzed data from three waves of assessment covering about 13 years (Wave 1: 1989/90; Wave 2: 1995/96,  $n = 131$ ; Wave 3: 2001/02,  $n = 101$ ). For the present study, we analyzed emotion regulation at Wave 1 predicting marital satisfaction at Wave 1 ( $n = 140$  couples), Wave 2 ( $n = 122$  couples), and Wave 3 ( $n = 92$  couples). None of the variables analyzed in the present study predicted drop-out over time, with the exception that lower wives' downregulation of negative emotional behavior predicted drop out at Wave 3,  $\text{Exp}(B) = .92, p = .010$ .

At Waves 1, 2, and 3, couples completed a set of questionnaires (see below) and participated in a laboratory session. In the laboratory session, couples engaged in three 15-minute conversations on the following topics: (a) events of the day or events since the last assessment; (b) conflict topic – an issue of continuing disagreement in their marriage; and (c) pleasant topic – something they enjoyed doing together. Physiological measures (see below) were obtained from both spouses during all conversations. Conversations were recorded on videotape for subsequent behavioral coding (see below). Several days later, in a second laboratory session, spouses individually watched the videotapes and provided continuous ratings (see below) of their own feelings during the interactions (evidence of the validity of this procedure was presented in Gottman & Levenson, 1985). Afterwards, spouses watched the conflict conversation a second time and provided continuous ratings of how they thought their spouse was feeling during the interaction. The present study only utilized spousal ratings of their own feelings during the conflict discussion. Between Wave 1 and 2 (i.e., here called Wave 1.5) participants completed a set of additional questionnaires via mail. The present study assessed downregulation of negative emotion at Wave 1, marital satisfaction at Wave 1, 2, and 3, and constructive communication at Wave 1.5.

## Measures

**Emotional experience**—During the video recall session, spouses continuously rated the valence of their emotional experience using a rating dial, which consisted of a rotary knob with a pointer that covered a 180-degree arc over a 9-point scale (1 = extremely negative; 5 = neutral; 9 = extremely positive). Spouses were instructed to adjust the dial as often as necessary so that it reflected the way they felt during the interaction. The rating dial position was sampled by computer 100 times per second and averaged every second. These second-by-second averages were converted into z-scores using the mean and standard deviation of each spouse's ratings across the 15-minute conversation. Z-scores were multiplied by  $-1$  so that greater values reflected more negative emotional experience. We note that the within-person z-score approach was selected to identify moments during which spouses' subjective

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<sup>2</sup>Results from this study have been reported in previous articles (e.g., Levenson, Carstensen, & Gottman, 1994), but none of them addressed the research questions analyzed here.

experience was significantly negative relative to other ratings the spouse made throughout the recall session (following recommended procedures; Levenson & Gottman, 1983).

**Emotional behavior**—Emotional behaviors were determined by observational coding of videotapes of the interaction using the Specific Affect coding system (SPAFF Version 2.0; Gottman, 1989). Trained coders who were blind to the study's hypothesis viewed the videotaped interactions and rated each spouse's emotional behaviors, taking into account verbal content, voice tone, context, facial expression, gestures, and body movements, on a second-by-second basis (inter-rater reliability [ $\kappa$ ] = .64, mean z-score = 19.25; note that mean z-score must exceed 1.96 for agreement to be significantly greater than chance; Carstensen, Gottman, & Levenson, 1995). There were five positive speaker codes, nine negative speaker codes, and a neutral speaker code. For the present study, only negative speaker codes were utilized (i.e., anger, belligerence, contempt, defensiveness, disgust, domineering, fear/tension/worry, sadness, whining). Each second was coded as 1 if a negative emotion behavior was present and 0 if not.

**Emotional physiology**—Continuous recordings of seven physiological measures were obtained from each spouse using a Grass Model 7 12-channel polygraph and a computer: (1) cardiac inter-beat interval; (2) skin conductance level; (3) finger temperature; (4) pulse transmission time to the finger; (5) finger pulse amplitude; (6) pulse transmission time to the ear; and (7) general somatic activity (for additional details see Levenson, Carstensen, & Gottman, 1993). A computer program written by Robert W. Levenson was used to calculate second-by-second averages for each physiological measure for each spouse. The second-by-second averages were converted into z-scores using the mean and standard deviation of each spouse's physiological measures across the entire 15-minute conversation. The z-scores were reverse scored as needed (i.e., cardiac inter-beat interval, finger pulse transmission time, finger pulse amplitude, and ear pulse transmission time) so that larger values reflected greater physiological arousal.

**Downregulation of negative emotion:** Emotion regulation was operationalized as the duration of time required for the three emotion components (i.e., experience, behavior, physiology) to decrease to a certain level following a negative emotion event. This necessitated two methodological steps: (a) identifying negative emotion events during the discussion and (b) measuring the duration of response for emotional experience, behavior, and physiology after each negative emotional event.

Based on the view that emotions lasts from 3–10 seconds (Ekman, 1992), a negative emotional event was identified for a spouse when 2 of the 3 components of that spouse's emotional response (emotional experience, behavior, and physiology) met the following criteria for 5-seconds: (a) negative emotional experience z-scores  $\geq 1.0$ ; (b) negative emotion behavior present; and (c) physiological measures z-scores  $\geq 1.0$  for at least 3 measures.<sup>3</sup> Additionally, to focus on negatives events with relatively clear onsets, it was required that the start of an emotional event be preceded by a period of at least 1 second in which these criteria were not met.

The criteria used to identify negative emotion were set blind to study hypotheses and couples' marital satisfaction. Using these criteria, 140 of the 156 couples had at least one negative emotion event (see Table 1); the 16 couples without a negative emotion event were excluded from subsequent analyses. Compared to included couples, excluded couples were older,  $t(154) = -2.357, p = .02$ , and showed a trend toward greater marital satisfaction,  $t(154) = -1.894, p = .06$ .

We next determined the duration of time that negative emotions persisted after each negative emotion event. This was measured separately for a) each spouse and b) each component of the emotional response (i.e., experience, behavior, physiology). Duration was calculated as the number of consecutive seconds following the event that a spouse remained at or above the previously defined criteria for a negative event for each component (i.e., experience: z-scores  $\geq 1.0$ ; behavior: presence of negative emotion behavior; physiology: z-scores  $\geq 1.0$  for at least 3 measures). When there was more than one negative emotion event for a spouse, the regulation scores were averaged across events. Because negative emotion events occurring for one spouse typically engage emotion regulatory resources of both spouses, i.e., co-regulation (Coan, 2008; Diamond & Aspinwall, 2003; Kappas, 2011; Levenson et al., in press), an emotion regulation score was also calculated for the *other* spouse when an emotion event had occurred. This was done by calculating the duration of the other spouse's emotional experience, behavior, and physiology following the same criteria as described above. All emotion regulation scores were then reverse-scored so that higher scores indicated greater emotion regulation (i.e., shorter duration of negative emotion). This method produced three emotion regulation scores per spouse: one for the regulation of experience, one for the regulation of behavior, and one for the regulation of physiology.<sup>5</sup>

**Marital satisfaction:** Marital satisfaction was measured at Waves 1, 2, and 3 by averaging each spouse's scores on two well-established self-report measures at each wave: (a) Locke-Wallace Marital Adjustment Test (LW) (e.g., "Do you confide in your mate?"; 15 items; Locke & Wallace, 1959); and (b) Locke-Williamson Marital Relationship Inventory (MRI) (e.g., "How happy would you rate your marriage?"; 22 items; Burgess, Locke, & Thomes, 1971). Consistent with these being long-term marriages, the mean satisfaction level (Wives at wave 1:  $M = 110.55, SD = 16.81$ ; husbands at wave 1:  $M = 110.33, SD = 16.89$ ) was higher than the population norm (approximately 100). Nonetheless, there was still a wide range of satisfaction levels (Wives at wave 1: 46.50–138; husbands at wave 1: 43.50–138). Both marital satisfaction measures showed high internal consistency for wives and husbands at all waves of data collection (Wife MRI:  $\alpha = .85$ ; Wife LW:  $\alpha = .70$ ; Wife marital

<sup>3</sup>The criteria used to identify negative emotion events were selected based on the following aims: a) maximize the number of couples with at least one negative event, b) identify the maximum number of events per couple, and c) select sufficiently strict criteria to identify events that were meaningfully distressing. Toward this end, frequencies (of the number of couples with at least one negative event and of the number of negative events per couple) were calculated utilizing different criteria (varied with respect to the z-score cut-off for the high negative arousal threshold, and the number of components of the emotional response system (out of 3: experience, behavior, physiology) required to simultaneously evidence high negative arousal). To avoid bias in terms of study hypotheses, criteria were set blind to spouses' marital satisfaction. For examples of negative emotion events, see Appendix with selected portions of transcript from couples' conflict conversations that represent periods of time when negative emotion events were occurring.

<sup>5</sup>The syntax for the procedure used to create the regulation scores was written and stored in a Microsoft Access database. It is available from authors upon request.

satisfaction composite:  $\alpha = .84$ ; Husband MRI:  $\alpha = .80$ ; Husband LW:  $\alpha = .70$ ; Husband marital satisfaction composite:  $\alpha = .82$  at all waves).

**Constructive communication (Wave 1.5):** Perceived constructive communication was measured at Wave 1.5 using a self-report scale that has shown close convergence with constructiveness objectively rated during videotaped problem-solving discussions (Heavey et al., 1996). Husbands and wives rated how they perceived both destructive and constructive communication behaviors in their marriage. The four destructive communication behaviors were: (a) mutual threat – both spouses threaten each other with negative consequences; (b) mutual blame – both spouses blame, accuse, and criticize each other; and (c)/(d) verbal aggression (husband to wife), verbal aggression (wife to husband) – calling names, swearing, attacking character. The three constructive communication behaviors were: (a) mutual negotiation – both spouses suggest solutions and compromises, (b) mutual expression – both spouses express their feelings to each other, and (c) mutual discussion – both spouses attempt to discuss the problem. Following Heavey et al. (1996), we subtracted the mean of 4 destructive communication behaviors from the mean of 3 constructive communication behaviors. The resulting scale (with items recoded accordingly) showed high internal consistency for wives ( $\alpha = .70$ ) and husbands ( $\alpha = .83$ ).

**Covariates (Wave 1):** Husbands and wives' number of negative emotion events and overall level of negative emotion during the discussion of marital conflict at Wave 1 were included as covariates. The number of negative emotion events was determined as described above. An overall level of negative emotion was computed by averaging the three negative emotion scores (for experience, behavior, and physiology) across all negative emotion events for each spouse.

## Data Analysis

Data were analyzed using actor-partner interdependence modeling (APIM) within a structural equation modeling framework (for a detailed discussion of this approach see Olsen & Kenny, 2006) using AMOS (Arbuckle, 2003). We examined associations that wives and husbands' downregulation of experience, behavior, or physiology had with wives and husbands' marital satisfaction. Our hypotheses were focused on within-spouse associations (e.g., wives' downregulation of experience predicting wives' marital satisfaction), but we also explored cross-spouse associations (e.g., wives' downregulation of experience predicting husbands' marital satisfaction). A conceptual APIM is shown in Figure 1. Because emotional reactivity and regulation are so intimately connected, we conducted a parallel set of follow-up analyses using downregulation and marital satisfaction variables that were corrected for emotional reactivity. This was accomplished by analyzing residualized scores that were computed by regressing the downregulation and marital satisfaction variables on the reactivity variables (i.e., number of negative emotion events and overall negative emotion). The grand mean was used when standardizing variables (see Kenny, Kashy, & Cook, 2006).

In a first set of analyses, we set up separate APIMs for each aspect of downregulation (i.e., experience, behavior, physiology) and examined concurrent associations with marital

satisfaction at Wave 1. In a second set of analyses, we set up separate APIMs for each aspect of downregulation and examined longitudinal associations with marital satisfaction. To model longitudinal changes, we used a residual change approach, which controls for baseline levels of marital satisfaction (i.e., we predicted marital satisfaction at Wave 2 or 3 by marital satisfaction at Wave 1 and saved the standardized residuals for further analysis).

In a third set of analyses, we explored whether the longitudinal associations between emotion downregulation and marital satisfaction were mediated by constructive communication using bias-corrected (BC) bootstrapping with 5000 bootstrap samples (see Preacher and Hayes, 2008). Specifically, we included wives and husbands' constructive communication as correlated mediators between downregulation and changes in marital satisfaction. For the mediation analyses, we analyzed z-standardized variables to reduce the number of parameters to be estimated (i.e., means and intercepts did not need to be estimated).

In a final set of analyses, we examined whether findings generalized across middle-aged and older cohorts using multi-group modeling. Following established procedures (e.g., Duncan & Duncan, 2004), we tested whether significant concurrent and longitudinal associations between aspects of emotion regulation and marital satisfaction differed across the two cohorts by comparing (a) an unconstrained model and (b) a model where the respective association was constrained to be equal across cohorts. A significant  $\chi^2$  difference between the unconstrained and the constrained model indicated that the association differed across cohorts.

In terms of model fit, for the first two sets of analyses, the models were just-identified (i.e., the implied covariance matrix was identical to the sample covariance matrix; e.g., Tomarken & Waller, 2003). Hence, the models showed perfect fit. For the third set of analyses,  $\chi^2$  was used as an indicator of model fit ( $p > .05$  indicated good fit). For the final set of analyses, we inspected  $\chi^2$  differences between the unconstrained and the constrained model.

As is typical with longitudinal data sets, there were participants in Wave 1 whose data were missing for Wave 2 and/or Wave 3. Following recommendations for longitudinal data (Jelici, Phelps, & Lerner, 2009), we estimated missing data using the Full Information Maximum Likelihood (FIML) algorithm. To avoid over-estimating missing data, we only included couples where at least one spouse had complete data for the aspect of emotion downregulation in question (experience:  $n = 138$ ; behavior:  $n = 136$ ; physiology:  $n = 112$ ). For mediation analyses, AMOS requires complete data for bootstrapping models; thus, we only included couples who had complete data for both husbands and wives at all waves of data collection (i.e., mediation model predicting change in marital satisfaction from Wave 1 to 2:  $n = 68$ ,  $n_{\text{adj}} = 65$ ; from Wave 1 to 3:  $n = 51$ ,  $n_{\text{adj}} = 50$ ).

## Results

### Preliminary Analyses

Analyses of gender and age differences in emotion regulation variables and covariates using ANCOVA revealed that older adults exhibited less regulation of negative emotional

experience,  $F(1, 239) = 5.72, p = .02$  than middle-aged adults. No main effects for gender or interactions between age and gender emerged.

Table 2 shows intercorrelations between the study variables.<sup>4</sup> Correlations among emotion regulation variables revealed that the associations among experience, behavior, and physiology downregulation were generally nonsignificant. This was expected, given that emotion regulation affects these components of emotional response differently (e.g., Gross & Levenson, 1993, 1997; Shiota & Levenson, 2009). Wives and husbands' downregulation of behavior were correlated with wives and husbands' perceived constructive communication.

### Downregulation of Negative Emotion and Marital Satisfaction: Concurrent Associations

We first examined concurrent associations between wives and husbands' downregulation of negative emotion and marital satisfaction at Wave 1. Table 3 presents the APIM results.

#### **Wives' downregulation of negative emotion and marital satisfaction at Wave 1**

—Greater wives' downregulation of experience was associated with greater wives' marital satisfaction at Wave 1,  $B = .17, SE(B) = .05, \beta = .29, p < .001; B_{adj} = .27, SE(B)_{adj} = .07, \beta_{adj} = .31, p_{adj} < .001$ . Greater wives' downregulation of experience was also associated with greater husbands' marital satisfaction at Wave 1,  $B = .19, SE(B) = .05, \beta = .32, p < .001; B_{adj} = .27, SE(B)_{adj} = .07, \beta_{adj} = .32, p_{adj} < .001$ .

Moreover, greater wives' downregulation of behavior was associated with greater wives' marital satisfaction at Wave 1,  $B = .22, SE(B) = .08; \beta = .26, p = .004; B_{adj} = .25, SE(B)_{adj} = .09, \beta_{adj} = .26, p_{adj} = .004$ . Greater wives' downregulation of behavior was also associated with greater husbands' marital satisfaction at Wave 1,  $B = .21, SE(B) = .08, \beta = .25, p = .005; B_{adj} = .21, SE(B)_{adj} = .09, \beta_{adj} = .22, p_{adj} = .015$ . Wives' downregulation of physiology was not associated with either wives or husbands' marital satisfaction at Wave 1, all  $ps > .05$ .

**Husbands' downregulation of negative emotion and marital satisfaction at Wave 1**—Husbands' downregulation of negative emotion (i.e., experience, behavior, and physiology) was not associated with wives or husbands' marital satisfaction at Wave 1, all  $ps > .05$ .

**Summary**—Greater wives' downregulation of experience and behavior were associated with greater marital satisfaction for both wives and husbands at Wave 1.

### Downregulation of Negative Emotion and Marital Satisfaction: Longitudinal Associations

We next examined longitudinal associations between wives and husbands' downregulation of negative emotion at Wave 1 and changes in marital satisfaction from Wave 1 to Wave 2 and Wave 1 to Wave 3, respectively. Table 4 presents the APIM results.

<sup>4</sup>None of the reactivity covariates (i.e., wives and husbands' number of emotional events and emotional arousal) were associated with marital satisfaction at Wave 1 (see Table 1). Follow-up analyses showed that the reactivity covariates also did not predict changes in marital satisfaction over time,  $ps > .05$ .

### **Wives' downregulation of negative emotion and changes in marital**

**satisfaction**—The association between greater wives' downregulation of behavior at Wave 1 predicting positive changes in wives' marital satisfaction from Wave 1 to 2 trended towards significance,  $B = .009$ ,  $SE(B) = .005$ ,  $\beta = .17$ ,  $p = .076$ ;  $B_{adj} = .19$ ,  $SE(B)_{adj} = .10$ ,  $\beta_{adj} = .18$ ,  $p_{adj} = .054$ , and became significant when excluding couples ( $n = 11$ ) where wives had missing behavioral data and controlling for covariates,  $B = .01$ ,  $SE(B) = .005$ ,  $\beta = .18$ ,  $p = .058$ ;  $B_{adj} = .22$ ,  $SE(B)_{adj} = .10$ ,  $\beta_{adj} = .21$ ,  $p_{adj} = .030$ . Moreover, greater wives' downregulation of behavior at Wave 1 significantly predicted positive changes in wives' marital satisfaction from Wave 1 to 3,  $B = .02$ ,  $SE(B) = .01$ ,  $\beta = .32$ ,  $p = .004$ ;  $B_{adj} = .40$ ,  $SE(B)_{adj} = .11$ ,  $\beta_{adj} = .39$ ,  $p_{adj} < .001$ . Wives' downregulation of behavior at Wave 1 did not predict changes in husbands' marital satisfaction, all  $ps > .05$ . Wives' downregulation of experience or physiology did not predict changes in wives' or husbands' marital satisfaction, all  $ps > .05$ .

### **Husbands' downregulation of negative emotion and changes in marital**

**satisfaction**—Husbands' downregulation of behavior at Wave 1 predicted positive changes in wives' marital satisfaction from Wave 1 to 2 when controlling for covariates,  $B = .001$ ,  $SE(B) = .01$ ,  $\beta = .02$ ,  $p = .851$ ;  $B_{adj} = .22$ ,  $SE(B)_{adj} = .10$ ,  $\beta_{adj} = .20$ ,  $p_{adj} = .035$ . No associations were found for husbands' downregulation of behavior at Wave 1 predicting changes in marital satisfaction from Wave 1 to 3,  $p > .05$ . Husbands' downregulation of behavior at Wave 1 did not predict changes in husbands' own marital satisfaction, all  $ps > .05$ . Husbands' downregulation of experience or physiology did not predict changes in wives or husbands' marital satisfaction, all  $ps > .05$ .

**Summary**—Greater wives' downregulation of behavior at Wave 1 predicted positive changes in wives' marital satisfaction from Wave 1 to 2 (when controlling for covariates) and from Wave 1 to 3. Greater husbands' downregulation of behavior at Wave 1 predicted positive changes in wives' marital satisfaction from Wave 1 to 2 when controlling for covariates.

## **Downregulation of Negative Emotion and Marital Satisfaction: Mediation by Constructive Communication**

We examined constructive communication as a mediator of the longitudinal associations. We focused on the indirect effects of wives and husbands' downregulation of behavior on changes in wives' marital satisfaction mediated by wives and husbands' perceived constructive communication because (a) wives and husbands' downregulation of behavior correlated with wives and husbands' perceived constructive communication (see Table 1) and (b) wives and husbands' downregulation of behavior predicted changes in wives' marital satisfaction (see Table 4).

First, we explored a mediation APIM predicting changes in wives' marital satisfaction from Wave 1 to Wave 2 (see Figure 2). The model showed good fit,  $\chi^2(4) = 2.55$ ,  $p = .636$ ,  $\chi^2(4)_{adj} = 5.30$ ,  $p_{adj} = .258$ . Wives' downregulation of behavior had a positive indirect effect on changes in wives' marital satisfaction, which was mediated by wives' perceived constructive communication,  $\beta = .08$ , BC 95% CI .004–.26,  $p = .037$ ;  $\beta_{adj} = .08$ , BC 95%

$CI_{adj} .001-.28, p_{adj} = .047$ . In contrast, the indirect effect of husbands' downregulation of behavior on changes in wives' marital satisfaction, mediated by husbands' perceived constructive communication, was not significant, all  $ps > .05$  (note that husbands' perceived constructive communication did not predict changes in wives' marital satisfaction,  $ps > .05$ ).

Second, we explored a mediation APIM predicting changes in wives' marital satisfaction from Wave 1 to Wave 3. The model showed good fit,  $\chi^2(4) = 1.63, p = .803, \chi^2(4)_{adj} = 2.17, p_{adj} = .705$ . Again, wives' downregulation of behavior had an indirect effect on changes in wives' marital satisfaction that was mediated by wives' perceived constructive communication,  $\beta = .14, BC\ 95\% CI .001-.44, p = .048$ , although the effect fell below significance when adjusting for covariates,  $\beta_{adj} = .11, BC\ 95\% CI_{adj} -.013-.42, p_{adj} = .087$ . In contrast, again, husbands' downregulation of behavior did not have an indirect effect on changes in wives' marital satisfaction that was mediated by husbands' perceived constructive communication,  $ps > .05$ .

Follow-up analyses showed that neither wives nor husbands' constructive communication predicted changes in husbands' marital satisfaction,  $ps > .05$ . Thus, model fit did not improve when including these additional paths in the model.

**Summary**—Greater wives' perceived constructive communication mediated the longitudinal association between greater wives' downregulation of behavior and positive changes in wives' marital satisfaction. No mediation effects emerged for husbands.

### Generalizability Across Age Cohorts

Finally, we examined whether the significant concurrent and longitudinal associations between emotion regulation and marital satisfaction generalized across cohorts. Multi-group models indicated that all associations generalized across middle-aged and older adults,  $\chi^2$ , all  $ps > .05$ , with one exception,  $\chi^2(1) = 5.61, p = .018; \chi^2(1)_{adj} = 3.90, p_{adj} = .048$ . The concurrent association between wives' downregulation of experience and husbands' marital satisfaction at Wave 1 was significantly positive in both age group but stronger for older adults,  $B = .35, SE(B) = .07, \beta = .54, p < .001; B_{adj} = .48, SE(B)_{adj} = .11, \beta_{adj} = .51, p_{adj} < .001$ , than for middle-aged adults,  $B = .12, SE(B) = .06, \beta = .23, p = .043; B_{adj} = .20, SE(B)_{adj} = .09, \beta_{adj} = .24, p_{adj} = .034$ .

### Discussion

Despite the importance that emotion regulation is thought to have for social relationships in general (Gross, Richards, & John, 2006) and intimate relationships in particular (Butler, 2011; Campos et al., 2011; Levenson et al., in press), the association between couples' emotion regulation and marital satisfaction has been surprisingly understudied. Because few measures of emotion regulation in couples exist (Levenson et al., in press), we developed a new, naturalistic approach to deriving emotion downregulation scores. This measure assessed the downregulation of negative emotion following negative events during conflict, a context for emotion regulation that is commonly encountered by couples. Our measure maximized ecological validity by being interpersonal (assessed during dyadic interaction), including multiple aspects of emotion (i.e., emotional experience, behavior, and

physiology), and being performance-based (couples were told to attempt to resolve a previously-identified marital conflict, but were not instructed to regulate their emotions).

Using data from a 13-year longitudinal study of middle-aged and older couples in long-term marriages, we found strong support for our hypothesis that high levels of emotion regulation would be associated with high levels marital satisfaction. Specifically, high levels of downregulation of wives' negative emotional experience and negative emotional behavior were associated with high levels of both current and future marital satisfaction. Thus, effective regulation of wives' emotion was both a characteristic of marriages that were currently highly satisfied as well as an indicator of marriages that would increase in satisfaction over time. Importantly, these effects showed some specificity: (a) they were found for wives' emotion regulation and not for husbands' (with one exception, as discussed below); (b) they were found for downregulating emotional experience and emotional behavior but not for physiology. Lastly, we found support for the notion that constructive communication (by wives) mediated longitudinal associations.

### **Emotion regulation and marital satisfaction: More than a wives' tale**

We found that greater downregulation of wives' negative emotion following negative emotion events was associated with greater levels of current marital satisfaction for husbands and wives as well as greater future levels of marital satisfaction for wives. In contrast, we found minimal relationship (one longitudinal association became significant when controlling for covariates) between downregulation of husbands' negative emotion and either spouse's current or future levels of marital satisfaction. This rather gendered set of findings is consistent with literatures that highlight wives' responsibility for and competence in regulating the affective balance in marriage (e.g., Gottman & Notarius, 2000). Thus, when it comes to emotion regulation and marital satisfaction, wives really matter.

Importantly, the present study revealed no differences between husbands and wives in the *amount* of downregulation they exhibited when a negative emotional event occurred; the difference was only in the association that regulation had with marital satisfaction. In the cohorts studied in this research (the middle-aged couples can be characterized as "baby boomers" and the older couples as "children of the Great Depression"), there may have been different emphases in the socialization of men and women as children (Chodorow, 1978; Eagly, 1987; Noller, 1993). Women, but not men, were socialized to be interpersonally oriented, both monitoring and orchestrating interpersonal intimacy. In these generational cohorts, we believe that there is some truth to the common stereotype that women are perceived as the emotional centers of marriage (e.g., the popularization of this research by Gray, 1992). This may lead couples to be especially attuned to wives', but not husbands', emotion regulation during conflict.

The expectation that women are the emotional experts in marriage may also manifest as husbands feeling less competent in dealing with highly emotional situations. For example, Gottman and Levenson (1988) proposed that men do not function as well as women in the context of high negative affect, becoming highly physiologically aroused and withdrawing

to manage this arousal. This may further reinforce couples to defer to wives' emotion regulation during conflict.

Hence, wives' emotion regulation may color both spouses' perception of marital quality much more than is the case for husbands' regulation. This spousal difference could have important implications for couples' therapies that focus on emotion and emotion regulation (e.g., Johnson, 2004; Gottman & Gottman, 2008). Such therapies may need to give particular attention to helping couples find ways to regulate wives' negative emotions.

Importantly, however, we did find one association between greater downregulation of husbands' behavior and positive change over time in wives' satisfaction (emerged only when controlling for covariates). In light of husbands' tendency to withdraw emotionally in conflict contexts (e.g., Christensen & Heavey, 1993), it may be that husbands' effective downregulation reflects an engagement – as opposed to withdrawal – in the marital dynamic that defies social expectation and supports wives' relationship satisfaction over time.

### **Differences among components of the emotion response**

The finding that greater downregulation of negative emotional experience and emotional behavior was associated with greater marital satisfaction, but downregulation of physiology was not, may result from subjective emotional experience and emotional behavior being more amenable to voluntary control and more clearly represented in conscious awareness than emotional physiology (Levenson, Soto, & Pole, 2007; Pennebaker, 1982; Soto, Levenson, & Ebling, 2005). Determining one's own marital satisfaction requires consideration of many factors; more accessible factors, such as emotional experience and behavior, may be weighted most heavily.

In terms of longitudinal associations with marital satisfaction, the downregulation of emotional behavior emerged as a crucial predictor. Thus, in predicting how marital satisfaction will fare over time, it may be most useful to determine how quickly wives downregulate their negative emotional behavior during conflict. This finding converges with prior research documenting the critical importance of emotional behavior for marital satisfaction and stability (see review in Bradbury, Fincham, & Beach, 2000; Gottman, 1994).

Finding that a physiological indicator of emotion regulation was not related to marital satisfaction in the present study must be contrasted with previous findings that other aspects of physiology during conflict conversations have been related to marital satisfaction. Examples of the latter include the average level of physiological activation, where high levels of activation have been associated with declining marital satisfaction over time (e.g., Levenson & Gottman, 1985) and the amount of physiological linkage or synchrony between spouses, where high levels of linkage have been associated with low levels of concurrent marital satisfaction (e.g., Levenson & Gottman, 1983). Note, however, that these physiological measures (downregulation, activation level, linkage) likely produce different kinds of visceral information that are differentially accessible to spouses at conscious and unconscious levels (Craig, 2009). Additionally, in recent work we have also found intriguing differences among groups of individuals in the extent to which their physiological changes

are coherent with their emotional experience (Sze, Gyurak, Yuan, & Levenson, 2010). Clearly, the role that bodily information plays in our lives and relationships is emerging as an extremely important concern in contemporary research (Barsalou, 2008; Meier, Schnall, Schwarz, & Bargh, 2012; Wilson, 2002).

### **Why downregulating negative emotion matters, and the role of constructive communication**

Our particular operationalization of emotion regulation – downregulating negative emotion – focused on how quickly spouses could restore emotional equilibrium following a discrete episode of negative emotionality. These negative emotional episodes can be considered to be “hot” or “danger” zones in couples interactions, functioning as absorbing states that pull partners in and from which it is difficult to escape (Gottman, et al., 2003). Spouses who have the capacity to escape from these states are thought to be less likely to suffer the kinds of relationship damage that can occur when negativity is entrapping, reciprocated, and prolonged (c.f., Gottman, 1994). Thus, when couples restore emotional equilibrium, they can engage in more creative problem solving (Isen, 1999), begin to understand each other’s perspective (Greenberg & Johnson, 1988), be more responsive to one another’s relationship repair efforts (Salvatore et al., 2011), and move toward more collaborative approaches to dealing with the underlying problem (Wile, 2002).

Consistent with this view, we found evidence that wives’ constructive communication behavior mediated the longitudinal association between wives’ downregulation of negative emotion and positive changes in wives’ marital satisfaction. Thus, wives who could escape zones of negativity faster were better able to use constructive communication (e.g., discuss the problem, suggest solutions and compromises). This kind of communication likely enables couples to make progress at solving the underlying issues, which, ultimately, predicts increases in marital satisfaction (for wives).

Note that this is not a model that suggests that marriages would benefit from suppressing all signs of negative emotion. In our view negative emotions can be quite useful for couples in particular situations. For example, anger may signal problem areas in relationships, which is necessary for repair (e.g., Gottman & Krokoff, 1989; Heavey et al., 1995). Instead, we suggest that the crucial element is *how* spouses respond to negative emotion events in their relationship and, specifically, *how long* they remain entrapped by them. This corresponds well to the literature on emotional flexibility, or the ability to move quickly between different emotional states (Hollenstein & Lewis, 2006). Emotional flexibility has been linked to adaptive outcomes in various intrapersonal (e.g., Bonanno, Papa, O’Neill, Westphal, & Coifman, 2004) and interpersonal (e.g., Butler & Gross, 2004) domains.

### **Strengths and Limitations**

As noted earlier, the present study had strengths in its longitudinal design and use of a method for measuring emotion regulation that was designed to maximize ecological validity. This approach was characterized by measuring emotion regulation performance as it emerged spontaneously in a highly relevant interpersonal context (i.e., marital conflict discussions); including measures of emotional regulation as manifest in emotional

experience, behavior, and physiology; using appropriate statistical methods for dealing with interdependencies between spouses; and using a 13-year longitudinal design. Because our measures of emotion regulation were based on performance, their association with self-reported marital satisfaction was not as vulnerable to inflation by common method variance (c.f., Kelley, 1992) as would be the case if all constructs were measured by questionnaires. Our results remained stable when controlling for aspects of emotion reactivity (i.e., number of negative emotion events, overall levels of negative emotion) and they generalized across middle-aged and older adults. There was one association, which (albeit significant in both age groups) was stronger for older than middle-aged adults; this is consistent with the notion that minimizing negative emotions becomes most important as we age (socioemotional selectivity theory; Carstensen et al., 1999).

The study had several limitations as well. We used a performance-based measure of emotion regulation; thus, we were not able to assess couples' ability to use specific regulatory strategies (e.g., suppression versus reappraisal). We focused on the down-regulation of negative emotion (arguably the most common form of regulation); thus, we were not able to assess other forms of regulation that are important for couples (e.g., the up-regulation of positive emotion; Levenson et al., in press; for a review, see Butler, 2011). Similarly, by focusing on a particular context (discussions of a marital problem), we cannot know whether our findings would generalize to other contexts. Whether a given regulatory process is associated with good or poor relationship outcomes may depend on the emotions involved and the relationship context in which it occurs (Aldao, 2013; Bridges, Denham, & Ganiban, 2004).

The sample of couples we used has both advantages and disadvantages. Long-term marriages have the advantage of having achieved some stability in emotional style, which lends greater confidence concerning the representativeness of relatively thin slices of behavior (Roberts, Tsai, & Coan, 2007). However, results may not generalize to newer marriages, which may face different priorities and challenges (c.f., Bradbury & Karney, 2004) and are also at greater risk for divorce (Cherlin, 1982). The sample was also constructed to be representative of marriages in these age groups in the San Francisco Bay Area. Thus, results may not generalize to marriages in other age cohorts or other geographic regions, which may differ in ethnic, educational, and socioeconomic makeup.

Finally, we should note that even though we carefully operationalized our measure of emotion regulation and provided statistical controls for certain aspects of emotional reactivity (i.e., the number of negative emotion events during the conflict discussion and overall levels of negative emotion), it is extremely difficult to study emotion regulation separately from emotional reactivity. Contemporary studies from the affective neuroscience literature reveal high levels of connectivity and co-activation between mesolimbic brain areas generally associated with emotion generation and prefrontal areas generally associated with emotion regulation (Ochsner, Silvers, & Buhle, 2012). Because of this, neural processes associated with both reactivity and regulation are likely to influence our measure of emotion downregulation.

## Conclusion

Despite the important role that emotion regulation is thought to play in social relationships (Campos et al., 2011), there have been few studies that have investigated the association between interpersonal emotion regulation and marital satisfaction. The present study found that greater downregulation of the experiential and behavioral aspects of wives' emotional response to negative emotion events was associated with: a) greater current levels of marital satisfaction for both wives and husbands and b) with a trajectory of greater marital satisfaction over time for wives. Moreover, support was found for the importance of wives' constructive communication behaviors in mediating the links between emotion regulation and marital satisfaction. Given the close relationship that marital satisfaction has with marital stability and with a host of other important outcomes in the domains of health and well-being, these findings have important implications for our understanding of the role that emotion regulation plays in marital success. It also points to several promising targets for interventions designed to improve couples emotional functioning and increase their level of marital satisfaction.

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## Appendix: Examples of negative emotion events during conflict conversation

Selected transcript from the conflict conversation of one study couple to illustrate “negative emotion events” per criteria described in Method section. Transcript selections extend beyond discrete negative moments, in order to provide context. Discrete negative moments are identified within the selections in **bold**. Double parentheses indicate overlapping speech between Husband (H) and Wife (W).

SELECTED TRANSCRIPT:

**W:** Karl, it’s such a pretty dress.

**H:** No.

**W:** What don’t you like about it?

**H:** Oh, the dropped waist, and the color, and the length. It ---- it makes you look like a -- hmm - sixty-year old widow. Something.

**W:** Do you know how many compliments I get on that when I wear that dress?

**H:** I don’t think they’re sincere.

**W:** I mean, people over and over and over again say, “You know, Penny, that’s a perfect color for you. And it looks so good on you.” **((Do you doubt those people lie?))**

**H:** ((Ah -- no -- let me -- maybe)) the color. It’s the cut. The cut.

**W:** But do you like it when I just wear the top?

**H:** I think so.

**W:** That’s not a problem, huh?

**H:** Yeah, I think it’s the pleated skirt isn’t it?

**W:** It isn’t a pleated skirt. It’s got a little bit of flair at the bottom. There’s no pleats to it.

**H:** See there, I kind of agree.

**W:** You didn’t like the other suit I have, either.

**H:** Oh yeah, I don’t care for the ((suit particularly.))

**W:** ((Then I put the --)) -- then I put ((the --))

**H:** ((We just)) tolerate the suits.

**W:** Yeah, I put -- what about my grey suit?

**H:** Yeah, we just tolerate that.

**W:** You tolerate that?

**H:** Yeah.

**W:** My Pendleton suit, you “tolerate!?”

**H:** It, doesn’t look, you know, “neat.”

**W:** So what would look “neat?”

**H:** The one in the window, in that corner window? Yeah, that’s

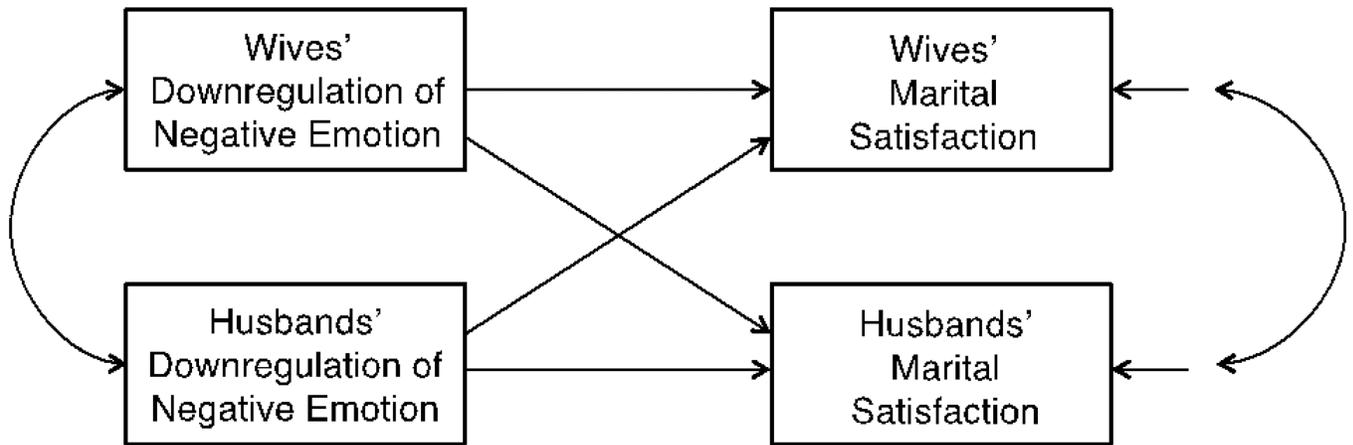
**W:** Sweetheart, that’s not a size that fits me. ((I guess!))

**H:** ((Hmm --))

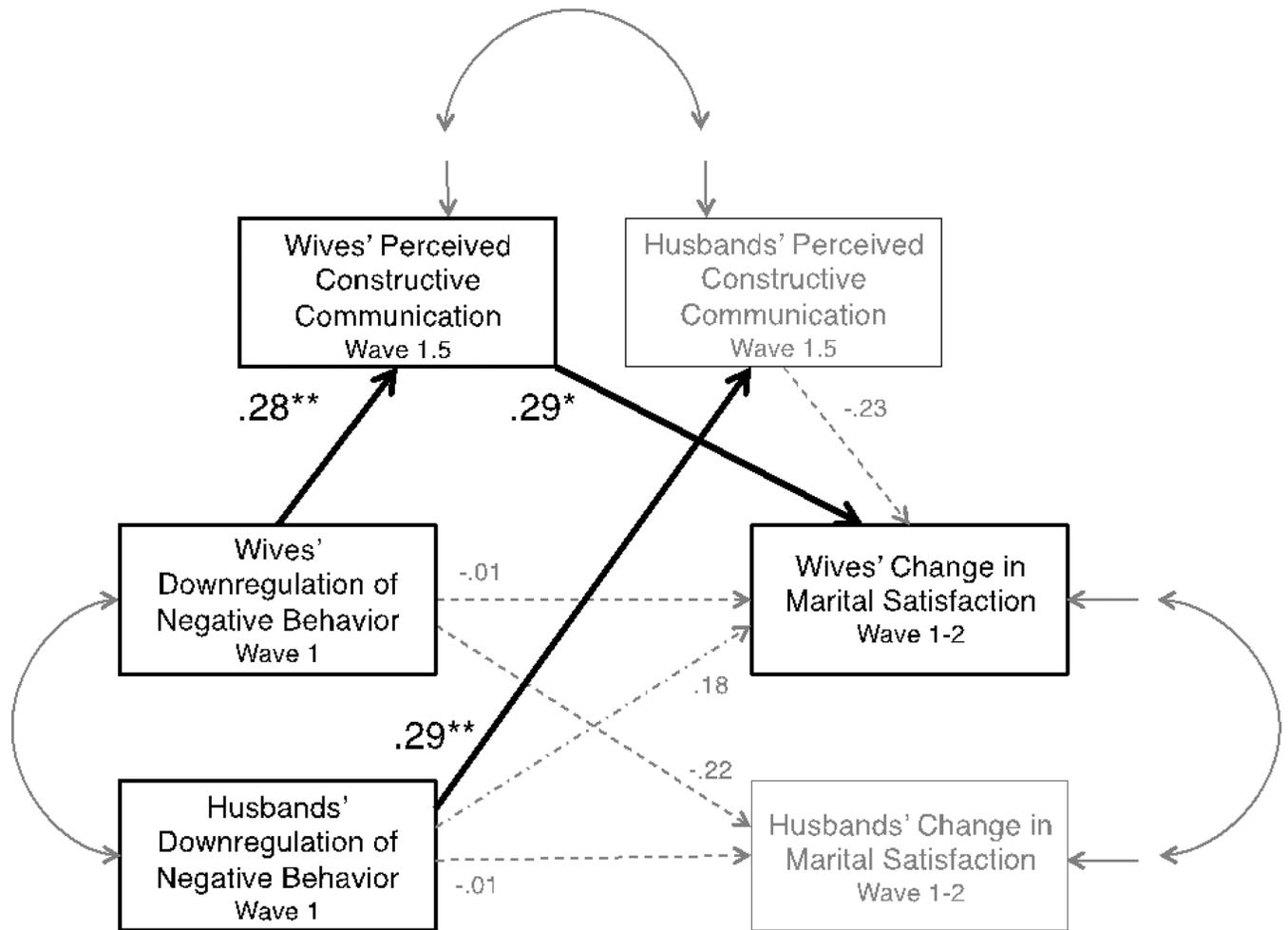
**W:** Besides, it’s for a teeny-bopper. It’s not for a forty-five year-old woman.

**H:** Hmm.

**W:** I tried it on. The cut is too low. The sleeves are too long. The whole thing, it’s not made for me.



**Figure 1.**  
 Wives' and Husbands' Downregulation of Negative Emotion and Marital Satisfaction:  
 Conceptual Actor-Partner Interdependence Models (APIM)



**Figure 2.** Downregulation of Negative Behavior and Marital Satisfaction: Mediation by Constructive Communication

*Note.* Variables were z-standardized. Standardized regression coefficients ( $\beta$ s) shown. Analyses are based on a subsample with complete data on all variables ( $n = 68$ ). Bold paths are significant,  $p < .05$ . Dotted paths are not significant,  $p > .05$ . Indirect effect of wives' downregulation of negative behavior on wives' change in marital satisfaction mediated by wives' perceived constructive communication,  $p < .05$ .

\* $p < .05$ . \*\* $p < .01$ .

**Table 1**

Frequencies of Negative Emotion Events per Couple

Number of negative emotion events	Frequency (i.e., number of couples)
1	9
2	5
3	7
4	3
5	10
6	12
7	10
8	8
9	13
10	12
11	13
12	9
13	10
14	5
15	3
16	4
18	4
20	1
21	1
25	1
Total	140 couples

Table 2

Zero-Order Intercorrelations at Wave 1

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1. Downregulation Experience W	-													
2. Downregulation Behavior W	.11	-												
3. Downregulation Physiology W	-.10	-.03	-											
4. Constructive Communication W	.14	.25*	-.00	-										
5. Marital Satisfaction W	.28**	.27**	-.13	.59***	-									
6. Negative Events W	.08	-.07	-.10	-.13	-.15	-								
7. Negative Emotion W	.08	-.33***	-.19	-.18	-.10	.21*	-							
8. Downregulation Experience H	-.07	.21*	.01	.09	.06	.02	-.14	-						
9. Downregulation Behavior H	.08	.22*	.18	.10	.09	-.05	-.09	.17	-					
10. Downregulation Physiology H	-.19	-.09	-.03	.01	.06	.00	.05	.12	.10	-				
11. Constructive Communication H	-.01	.16	-.05	.59***	.61***	-.21*	-.19	.06	.24*	.24	-			
12. Marital Satisfaction H	.31***	.26**	-.06	.46***	.82***	-.10	-.05	.13	.04	.07	.58***	-		
13. Negative Events H	-.05	-.22*	-.06	-.05	-.05	.18*	.09	-.11	-.28**	-.04	-.08	-.15	-	
14. Negative Emotion H	-.04	-.21*	.14	.11	.02	-.07	.19*	-.03	-.30**	.02	.08	-.03	.26**	-

Note. W = Wife. H = Husband.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

**Table 3**

## Downregulation of Negative Emotion and Marital Satisfaction: Concurrent Associations

	Marital Satisfaction Wave 1			
	Wives		Husbands	
Downregulation of Experience Wave 1				
Wives	.29***	(.31***)	.32***	(.32***)
Husbands	.08	(.07)	.15	(.14)
$R^2$	.09	(.10)	.12	(.12)
Downregulation of Behavior Wave 1				
Wives	.26**	(.26**)	.25**	(.22*)
Husbands	.03	(.02)	-.02	(-.02)
$R^2$	.07	(.07)	.06	(.05)
Downregulation of Physiology Wave 1				
Wives	-.13	(-.16)	-.06	(-.09)
Husbands	.05	(.08)	.06	(.07)
$R^2$	.02	(.03)	.01	(.01)

*Note.* Standardized regression coefficients ( $\beta$ s) from three separate APIM modeling concurrent associations between downregulation of negative emotion (i.e., experience, behavior, or physiology) predicting marital satisfaction at wave 1. Parentheses: Adjusted standardized regression coefficients ( $\beta_{adj}$ ) controlled for negative emotion events and overall level of negative emotion.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

**Table 4**

## Downregulation of Negative Emotion and Marital Satisfaction: Longitudinal Associations

	Change in Marital Satisfaction Wave 1 to 2		Change in Marital Satisfaction Wave 1 to 3	
	Wives	Husbands	Wives	Husbands
Downregulation of Experience Wave 1				
Wives	.11 (.08)	.14 (.16)	-.05 (-.04)	-.06 (-.02)
Husbands	.03 (.02)	-.01 (.00)	-.07 (-.07)	.03 (.08)
$R^2$	.01 (.01)	.02 (.03)	.01 (.01)	.01 (.01)
Downregulation of Behavior Wave 1				
Wives	.17 (.18)	-.08 (-.02)	.32** (.39***)	-.07 (-.02)
Husbands	.06 (.20*)	.02 (.00)	.05 (-.02)	-.17 (-.19)
$R^2$	.04 (.09)	.01 (.00)	.11 (.15)	.04 (.04)
Downregulation of Physiology Wave 1				
Wives	.03 (.05)	.05 (.07)	.01 (-.02)	-.05 (-.03)
Husbands	.02 (.02)	-.01 (.01)	.04 (.02)	-.12 (-.15)
$R^2$	.00 (.00)	.00 (.01)	.00 (.00)	.02 (.02)

*Note.* Standardized regression coefficients ( $\beta$ s) from three separate APIM modeling longitudinal associations between downregulation of negative emotion (i.e., experience, behavior, or physiology) predicting changes in marital satisfaction from wave 1 to 2 and wave 1 to 3. Parentheses: Adjusted standardized regression coefficients ( $\beta_{adj}$ ) controlled for negative emotion events and overall level of negative emotion.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .