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Abstract

What happens when people suppress their emotions when they sacrifice for a romantic partner? This multimethod study investigates how suppressing emotions during sacrifice shapes affective and relationship outcomes. In Part 1, dating couples came into the laboratory to discuss important romantic relationship sacrifices. Suppressing emotions was associated with emotional costs for the partner discussing his or her sacrifice. In Part 2, couples participated in a 14-day daily experience study. Within-person increases in emotional suppression during daily sacrifice were associated with decreases in emotional well-being and relationship quality as reported by both members of romantic dyads. In Part 3, suppression predicted decreases in relationship satisfaction and increases in thoughts about breaking up with a romantic partner 3 months later. In the first two parts of the study, authenticity mediated the costly effects of suppression. Implications for research on close relationships and emotion regulation are discussed.

Keywords

close relationships, emotions, emotion regulation, suppression, authenticity

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An emerging truism in research on close relationships is that couples have to “work” to successfully maintain their relationships over time. One important relationship tool concerns the extent to which partners are willing to *sacrifice* their own wishes and desires to promote each other’s well-being or the well-being of the relationship (Van Lange, Rusbult, et al., 1997). Indeed, a hallmark of satisfying and long-lasting relationships is the extent to which partners are willing to give up their own interests and desires for the sake of a relationship partner (see review by Impett & Gordon, 2008). Some sacrifices can be as mundane as running unwanted errands or going to a partner’s work event (Impett, Gable, & Peplau, 2005), whereas others can be as momentous as choosing where to build a life together (Van Lange, Rusbult, et al., 1997). Several studies have shown that the more willing people are to make sacrifices for an intimate partner, the more satisfied they are with their relationships and the more likely they are to stay together over time (Van Lange, Agnew, Harinck, & Steemers, 1997; Van Lange, Rusbult, et al., 1997; Wieselquist, Rusbult, Foster, & Agnew, 1999).

Sacrifice is an inevitable, even beneficial, component of successful relationships, and yet, not all sacrifices are equal. Sometimes giving up our own wishes and desires feels good (Impett et al., 2005; Kogan et al., 2010), but at other times,

sacrifice can leave lingering feelings of guilt and resentment, emotions that may ultimately detract from both partners’ feelings of satisfaction with the relationship (Impett et al., 2005; Rusbult & Van Lange, 1996). Because intense emotions are inherent to sacrifice, how people deal with and *regulate* these emotions may have important implications for their emotional well-being and for the quality of their interpersonal relationships. Emotional suppression, when people attempt to inhibit or conceal the emotions that they experience, is a common emotion regulation strategy that has been shown to be relatively unhealthy (Gross, 1998; Gross & John, 2003; John & Gross, 2004). The central goal of this article is to examine the potential emotional and relationship costs of suppressing emotions when people make

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sacrifices, both for the person who makes the sacrifice and for the recipient.

Although it is possible that hiding the emotions when making sacrifices may enable people to preserve closeness and avoid conflict in their relationships, we argue that concealing emotions will lead people to feel inauthentic, ultimately detracting from the quality of people's emotional lives and from intimacy in their romantic relationships. In a multimethod study of romantic couples, we apply an emotion regulation perspective to the study of sacrifice and test our hypotheses in the laboratory (Part 1), in daily life (Part 2), and over a 3-month period of time (Part 3).

An Emotion Regulation Perspective on Suppression

Emotion regulation refers to the ways that we influence the emotions that we have, including how we experience and express our emotions (Gross, 1998). In this article, we focus on one response-focused emotion regulation strategy—suppression. Suppression is a form of response modulation that involves inhibiting or concealing ongoing emotional expression after an emotional response has been elicited (Gross, 1998; Mauss, Bunge, & Gross, 2007). Because suppression focuses on the *display* of emotion, it is considered to be more of an interpersonal emotion regulation strategy than other strategies (such as cognitive reappraisal) that focus more on the inner experience of emotion (John & Gross, 2004).

Experimental studies of emotion regulation suggest that the use of suppression can reduce the outward expression of emotions (Gross, 1998; Gross & Levenson, 1997), a strategy which may be useful in some interpersonal contexts. However, a person suppressing his or her emotions can incur several costs (John & Gross, 2004). In terms of affective consequences, as suppression is used chronically over time, it is linked with greater experience of negative emotion and less experience of positive emotion as well as lower overall well-being (Gross & John, 2003). There are also distinct social costs of suppression. Research has shown that people who suppress their emotions habitually experience less closeness with others, receive less social support in times of need, and have interpersonal relationships characterized by lower feelings of satisfaction (English, 2009; Gross & John, 2003; Srivastava, Tamir, McGonigal, John, & Gross, 2009).

An emerging body of research suggests that there are also potential costs for the people with whom suppressors interact. In one experimental study of previous unacquainted female dyads, the randomly assigned partners of women experimentally induced to suppress their emotions felt less rapport during their interactions and were less willing to form a friendship than were the partners of women who were instructed to act naturally (Butler et al., 2003). The partners of suppressors also had higher blood pressure, suggesting that it may be stressful to interact with people who suppress

their emotions. People who habitually suppress their emotions also tend to have friends who say that they have poorer quality relationships with others (Gross & John, 2003; Srivastava et al., 2009).

The overwhelming majority of the research has examined the costs of suppression in controlled laboratory settings in reaction to film clips designed to induce emotion (Gross & Levenson, 1997) or has conceptualized suppression as a trait-level individual difference variable, stable across time and situations (Gross & John, 2003). One study to date has investigated within-person variation in suppression and links with well-being. In a 3-week daily experience study, Nezlek and Kuppens (2008) found that daily suppression was associated with more negative emotion and lower self-esteem. This study documented that there is a great deal of variability in daily suppression such that on some days people suppress their emotions a great deal, whereas on other days they suppress rarely or not at all. No empirical research to date has investigated the use of suppression as an emotion regulation strategy in the daily lives of romantic couples.

The Mediating Role of Authenticity

Emotion regulation researchers have suggested that one reason why people who suppress their emotions experience emotional and social costs is because they have a sense that they are not being authentic or true to themselves when they suppress their emotions (English, 2009; Gross & John, 2003). Authenticity, defined as the extent to which people behave in ways that are congruent with their own inner feelings, attitudes, and beliefs (Sheldon, Ryan, Rawsthorne, & Ilardi, 1997; Wood, Linley, Maltby, Baliouisis, & Joseph, 2008), has long been thought to be an important component of psychological well-being and interpersonal functioning (Festinger, 1957; Rogers, 1961). Several lines of research suggest that authenticity predicts better adjustment, including higher self-esteem, lower depression, and greater life satisfaction, as well as greater relationship quality (English, 2009; Impett, Sorsoli, Schooler, Henson, & Tolman, 2008; Kernis & Goldman, 2006; Sheldon et al., 1997; Swann, De La Ronde, & Hixon, 1994).

Because suppression reduces the expression but not the experience of emotions (Gross, 1998; Gross & Levenson, 1997), people may feel a sense of discrepancy or incongruence between their inner feelings and their outward behavior when they suppress their emotions (Higgins, 1987; Rogers, 1961). Indeed, research has shown that individuals who habitually suppress their emotions tend to feel less authentic or true to themselves (English, 2009; Gross, 1998; Gross & John, 2003). Furthermore, authenticity provides one possible mechanism whereby the habitual use of expression impacts emotional experience (Gross & John, 2003) and social functioning (English, 2009). In addition, being perceived by others as authentic has been shown to impact the quality of

intimate relationships. Research based on a self-verification theory framework has shown that young adults in romantic relationships are most intimate with and most committed to dating partners who see them as they see themselves (e.g., Katz & Joiner, 2002; Swann et al., 1994). Indeed, process models of intimacy suggest that connection and intimacy in close relationships depend on feeling understood by one's partner (Reis & Shaver, 1988), so when people are not verified by their relationship partners, satisfaction may be eroded and conflict may build up.

An Emotion Regulation Perspective on Sacrifice

The central goal of this research was to merge research on emotion regulation with research on close relationships to examine the emotional and relationship consequences of suppressing emotions in the context of sacrifice. By definition, sacrifice involves providing a benefit for another person by subordinating one's own personal goals and potentially accruing personal costs in the process (see review by Impett & Gordon, 2008; see also Killen & Turriel, 1998; Powell & Van Vugt, 2003; Whitton, Stanley, & Markman, 2007). Sacrifice may involve performing unwanted actions, giving up something that one wants, or both (Van Lange, Rusbult, et al., 1997). Engaging in sacrifice also has the potential to simultaneously arouse strong positive emotions such as joy and delight as well as negative emotions such as anger, frustration, and resentment (Impett et al., 2005; Kogan et al., 2010). Because of the intensely emotional nature of sacrifice, coupled with the potential costs incurred as a result of prioritizing the partner's goals over personal interests and desires, we suggest that sacrifice is an important context in which to study the consequences of suppression in close relationships.

Existing research on emotion regulation suggests that suppression is a particularly unhealthy strategy, one which carries both emotional and social costs to the regulator (e.g., Gross & John, 2003; John & Gross, 2004; Srivastava et al., 2009). Drawing from and extending this body of research, our first set of predictions concern the associations between suppression, authenticity, and the emotional experience of the person who engages in sacrifice. We predicted that suppressing emotions when making a sacrifice may lead people to feel as though their sacrifices are not an authentic reflection of their true selves, in turn leading them to experience more negative and less positive emotions.

Second, we investigated whether one person's emotional suppression when making a sacrifice would be associated with his or her partner's emotional experience. Here, we explored two possibilities. On one hand, people may be highly attuned to their partner's emotions when he or she makes a sacrifice, due to the costly nature of these actions and the special significance that they may hold for the

relationship (Impett & Gordon, 2008; Noller, 1996). Therefore, sacrifice might provide a context in which we would find harmful effects of suppression on a romantic partner's emotional experience. On the other hand, existing research on emotion regulation more generally has not shown affective consequences for the interaction partners with whom suppressors interact (Butler et al., 2003; Richards & Gross, 2000). Based on this study, it is possible that the effects of suppression do not extend to romantic partners and we may not find an association between suppression and the romantic partner's emotional experience. We explored both possibilities in this research.

Our third set of hypotheses concerned associations between emotional suppression in the context of sacrifice and the quality of interpersonal relationships. Here, we predicted that emotional suppression would be associated with romantic relationship functioning, both in the moment when sacrifices are made and over the course of time. We predicted that both the person who makes the sacrifice and the romantic partner would report that their relationship is characterized by less relationship satisfaction and laden with more conflict when the person who makes a sacrifice suppresses his or her genuine emotions. In short, although people may suppress their emotions during a sacrifice to avoid conflict, we suggest that these efforts may backfire, ultimately detracting from the quality and stability of interpersonal bonds.

We tested our hypotheses regarding the affective and relationship costs of emotional suppression in a three-part study of romantic couples. In Part 1, we examined the effects of suppression on affective experience as couples discussed important and meaningful sacrifices in the laboratory. To broaden the ecological validity of these effects, in Part 2, these same couples participated in a 14-day daily experience study to examine the effects of suppressing emotions during daily sacrifices on affective experience and the quality of romantic relationships. Finally, in Part 3, we contacted couples 3 months later to examine the effects of suppression on relationships over a longer period of time.

Part I: Suppression and Conversations About Sacrifice in the Laboratory

We tested two central predictions stemming from our emotion regulation framework on sacrifice in a laboratory study of dating couples. First, we predicted that emotional suppression when discussing meaningful life sacrifices would be associated with experiencing less positive emotions such as joy, love, and pride, and with more negative emotions such as anger, resentment, and loneliness. We also expected that one reason why suppressing emotions may be emotionally costly is because people feel that they are not being authentic when they suppress their emotions. Second, we examined whether suppression would be associated with the romantic partner's emotional experience.

Method

Participants and Procedure. Eighty couples ($N = 160$ individuals) were recruited for the study. Of these couples, 75 were heterosexual, 4 were lesbian, and there was 1 gay male couple in the sample. Participants comprised a diverse range of ethnic backgrounds: 53% were European or European American, 18% were Chinese or Chinese American, 8% were African or African American, 4% were Mexican or Mexican American, and 17% were of other ethnicities. Participants ranged in age from 18 to 60 years ($M = 23.9$, $SD = 6.4$). The couples had been dating from 6 months to 30 years (median = 15 months; $SD = 44$ months). Forty-eight percent of the couples were cohabitating.

All participants were recruited from the San Francisco Bay Area by means of online flyers posted on Craigslist.org and paper flyers placed throughout the Bay Area. After both partners agreed to take part in the study, the participants were emailed a web link to the initial online survey, which was to be completed before the couple arrived at our laboratory. Couples came individually to the laboratory, completed several self-report measures, and participated in several videotaped interactions. Of particular interest to this study are two conversations about sacrifice. Each partner took a turn in discussing “the most important or meaningful sacrifice that you have made for your partner over the course of your relationship.” The mean length of discussions was 3 min, 28 s ($SD = 1$ min, 23 s; range = 1 min, 14 s to 5 min, 4 s); speaking order for the conversations was randomly assigned through a coin flip (all analyses control for both length and order of conversation). Each partner in the couple was paid US\$20.

Baseline Measures

Relationship satisfaction. Relationship satisfaction was assessed at the baseline of the study with five items (Rusbult, Martz, & Agnew, 1998; $\alpha = .90$). Participants responded to such questions as “Our relationship makes me happy” on 7-point scales (0 = *strongly disagree* to 6 = *strongly agree*).

Habitual suppression. Three items from the Emotion Regulation Questionnaire (ERQ; Gross & John, 2003) were used to measure habitual suppression ($\alpha = .61$). Participants responded to questions such as “I control my emotions by not expressing them” on 5-point scales (0 = *strongly disagree* to 4 = *strongly agree*).

Neuroticism. Eight items from the Big Five Inventory (BFI; John & Srivastava, 1999) were used to measure trait neuroticism ($\alpha = .84$). Participants responded to such questions as “gets nervous easily” on 5-point scales (0 = *strongly disagree* to 4 = *strongly agree*).

Laboratory Measures

Emotions. Immediately after each partner’s sacrifice conversation, participants were asked to indicate the extent to which they were feeling each of 15 emotions on 5-point scales (1 = *not at all* to 5 = *a lot*). This measure was adapted

for use in romantic relationships from a measure of social emotions (Srivastava et al., 2009) and was used in a previous study of dating couples (Impett et al., 2010). The scale included eight positive emotions captured in synonym clusters: amused/having fun, happy/pleased/joyful, proud/good about myself, uplifted/inspired/elevated, affectionate/loving/caring, cared about/loved/connected, compassionate/sympathetic, and grateful/appreciative/thankful ($\alpha = .95$). The seven negative emotions included: angry/irritable/frustrated, anxious/nervous, guilty/embarrassed/ashamed, sad/depressed/down, criticized/blamed, lonely/isolated, and resentful toward my partner ($\alpha = .86$).

Suppression. Participants were also asked to indicate the extent to which they suppressed their emotions when discussing their sacrifice by answering the following three questions adapted from the ERQ (Gross & John, 2003): “I controlled my emotions by not expressing them”; “When I was feeling negative emotions, I was careful not to express them”; and “When I was feeling positive emotions, I made sure not to express them” on 7-point scales (1 = *strongly disagree* to 7 = *strongly agree*). On the basis of previous research on emotional suppression (Gross & John, 2003), we combined the three suppression items into one overall suppression score ($\alpha = .71$).

Authenticity. After each of the sacrifice conversations, participants answered the question: “I was authentic (true to myself)” on a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*).

Coding the Sacrifice Conversations. Conversation topics ranged across a large spectrum of relationship issues, including giving up spending time alone and a sense of personal freedom, sacrificing other interpersonal relationships, providing financial support to one’s partner, relocating to a new city or state, turning down potentially lucrative job offers in other geographical regions, limiting college choices to remain in the area, and changing personality traits (i.e., neuroticism, jealousy, etc.). Two coders independently coded the conversations for the size/severity of the sacrifice (1 = *not major at all* to 7 = *very major*). They both coded all of the conversations ($\alpha = .80$), and we created a composite score to represent the mean of the two codes.

Results

Data Analysis Plan. To test our predictions regarding the effects of emotional suppression on affective experience in the laboratory, we used mixed models in PASW 18.0 (IBM SPSS, 2009) to statistically address the nested nature of the data (i.e., partners nested within the couple). Multilevel mediation coefficients were computed using methods outlined by Zhang, Zyphur, and Preacher (2009), and the Monte Carlo Method for Assessing Mediation (MCMAM; Selig & Preacher, 2008) was used to generate a 95% confidence interval (CI) for the indirect effect with 20,000 resamples.

Significant mediation is indicated when the upper and lower limits of the CI do *not* include zero.

Affective and Relational Costs for the Suppressor. The first set of hypotheses concerned the effects of suppression during the sacrifice conversations on the affective experience of the person discussing his or her most important sacrifice. We predicted that the more people suppress their emotions when they discuss making a sacrifice, the more negative emotions and fewer positive emotions they will experience in the laboratory. Consistent with our hypotheses, suppression was associated with more negative emotions ($B = .26$, $p < .001$) and marginally less positive emotions ($B = -.21$, $p = .06$).

We predicted that one reason why people who suppress their emotions when discussing sacrifice experience more negative emotions is because they feel as though they are not being authentic or true to themselves. In other words, authenticity should mediate the association between suppression and negative emotions. When suppression and authenticity were entered simultaneously, authenticity predicted experiencing significantly less negative emotions ($B = -.17$, $p = .002$) and more positive emotions ($B = .38$, $p < .001$). Additional analyses revealed that authenticity partially mediated the link between suppression and negative emotions ($ab = .044$, $SE = .018$; 95% CI = [.02, .08]; direct effect = .19, $SE = .06$, $p = .006$) and fully mediated the link between suppression and positive emotions ($ab = .10$, $SE = .031$; 95% CI = [-.17, -.04]; direct effect = -.01, $SE = .10$, $p = .99$). In short, participants who suppressed their emotions when discussing a major sacrifice in the laboratory felt that they were not being authentic, in turn leading them to experience more negative and less positive emotions.

Affective and Relational Costs for the Romantic Partner. Our second set of analyses concerned possible effects of emotional suppression on the romantic partner. The results revealed that there were no significant effects of one person's suppression on the romantic partner's affective experience in the laboratory. Specifically, suppression was not significantly associated with the partner's negative emotions ($B = -.06$, $p = .40$) or positive emotions ($B = .01$, $p = .99$).

Ruling Out Alternative Hypotheses. Inferences regarding the associations between suppression and people's own emotional experiences in the laboratory are undermined by potential confounds. One relevant confound concerns the size or the severity of the sacrifice discussed. It is possible that people who suppressed their emotions may have been discussing sacrifices of relatively greater importance than those who were less likely to suppress, in turn accounting for the reported pattern of results. Another alternative hypothesis is that the people in unhappy relationships may have been especially likely to feel negative emotions such as resentment and thus may have felt the urge to suppress these

emotions, in turn accounting for the costs of suppression. Finally, it is also possible that negative emotions experienced in the laboratory may have been influenced by individual differences in trait neuroticism or the tendency to habitually suppress emotions. To demonstrate that the emotional correlates of suppression would be robust beyond the influence of sacrifice severity, relationship satisfaction, trait neuroticism, and habitual suppression, we conducted a final set of analyses in which we controlled for these four factors simultaneously in predicting negative emotions and authenticity. Even after controlling for these covariates, the associations between suppression and both negative emotions and authenticity remained significant, ruling out the hypothesis that the emotional costs of suppression were due to differences in sacrifice severity, current relationship satisfaction, neuroticism, or habitual levels of suppression.¹

Brief Discussion

In laboratory discussions about important relationship sacrifices, people who suppressed their emotions felt less authentic, in turn leading them to experience increased negative and decreased positive emotions. One person's suppression while discussing his or her sacrifice was not associated with the partner's emotional experience in the laboratory—a point to which we will return in the discussion. The sacrifices discussed by couples in the laboratory represented the most important sacrifices that they have made over the course of their relationships. As a result, they may not have been representative of the typical or recurrent types of sacrifices that couples make in their everyday lives (Impett et al., 2005, Impett & Gordon, 2010). In Part 2, we sought to provide a more naturalistic account of relationship sacrifices and to examine within-person variation in the use of suppression as an emotion regulation strategy in daily life. The laboratory study also focused solely on links between suppression and affective experience. A second goal of Part 2 was to examine the interpersonal as well as affective costs of suppressing emotions when making sacrifices in romantic relationships.

Part 2: Suppression and Sacrifice in Daily Life

We conducted a 14-day dyadic daily experience study to test our predictions about the effects of suppressing emotions while making sacrifices in daily life. Paralleling the structure of Part 1, we tested hypotheses concerning the effects of daily suppression on the person who suppresses his or her emotions as well as on the romantic partner. First, we predicted that on days when people suppress their emotions when making a sacrifice, they would report a poorer affective experience profile (i.e., more negative emotions, less positive emotions, and lower satisfaction with life) and decreased relationship quality (i.e., less satisfaction and

more conflict), and that authenticity would mediate these effects. Second, we also examined the possibility that people would report affective and relationship costs on days when their romantic partners suppressed their emotions as well as whether authenticity might mediate these effects.

Method

Participants and Procedure. After participation in the laboratory study in Part 1, the same 80 couples received training in how to complete the daily experience component of the study. Specifically, both members were asked to complete a 10-min online survey through surveyMonkey.com for 14 consecutive nights beginning the day of the laboratory session. Participants were informed that in the event that they missed a diary at night, they should complete the diary the morning of the next day; however, they were also told that if they did not complete the diary by end of the morning of the next day, they should skip that diary. In addition to explaining the basic procedures to the couples, the research assistants also stressed that each diary should be completed anonymously, that the two partners should not discuss their answers with one another during the course of the study, and that the research team would never reveal their responses to one another.

To maximize compliance with the daily nature of the protocol, we sent reminders via email and employed a lottery bonus system. Each night around 10 p.m., a member of the research team emailed a reminder to all participants who had not yet completed the diary that evening. Participants were also instructed that for every diary they completed on time, a ticket in their name would be entered into a raffle to win an additional US\$100, US\$50, and US\$25 cash prize. A total of 158 participants completed 1,876 diary entries on time as determined by an automatic time-stamp generated by the website, an average of 11.7 (out of 14) days per person. Each partner was paid US\$30 for participating in the daily diary study.

Daily Measures

Daily sacrifice. Participants answered questions used in previous research designed to assess whether or not they made a daily sacrifice: "Today, did you do anything that you did not particularly want to do for your partner? Or, did you give up something that you did want to do for the sake of your partner?" (Impett et al., 2005). We asked four additional questions to obtain more nuanced information about the quality of the daily sacrifices (assessed on 5-point scales from 0 = *strongly disagree* to 4 = *strongly agree*), including (1) *effort* ("I put a lot of time and effort into making this sacrifice"), (2) *typicality* ("I frequently make sacrifices like this one for my partner"), (3) *reluctance* ("I felt reluctant or hesitant to make this sacrifice"), and (4) *perceived partner needs* ("My partner really wanted or needed me to make this sacrifice").

Emotional suppression during sacrifice. Each time the participants indicated that they made a sacrifice, they answered the following three questions adapted from the ERQ (Gross & John, 2003) to measure suppression: "I controlled my emotions by not expressing them"; "When I was feeling negative emotions, I was careful not to express them"; and "When I was feeling positive emotions, I made sure not to express them" on 5-point scales (0 = *not at all* to 4 = *a lot*). We combined the three suppression items into one overall suppression score. The day-level α (ignoring person) was .78 and the person-level α (collapsing across days) was .77.

Authenticity. Each time that participants reported a sacrifice, they answered the following question on a 5-point scale (0 = *strongly disagree* to 4 = *strongly agree*): "I felt authentic (true to myself) while making this sacrifice." This question has been used in previous research on sacrifice in relationships and has been demonstrated to be a valid one-item indicator of authenticity (Kogan et al., 2010).

Emotions. Participants indicated the extent to which they experienced the same 15 emotions measured in the laboratory on 5-point scales (0 = *not at all* to 4 = *a lot*). The alphas were high for the composite of eight positive emotions (day-level α = .93; person-level α = .96) and the composite of seven negative emotions (day-level α = .85; person-level α = .93).

Satisfaction with life. Participants completed the five-item Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985), and the items were modified to refer to how participants felt "that day" (day-level α = .95; person-level α = .98).

Relationship quality. Participants indicated the extent to which they experienced three positive indicators of relationship quality (i.e., satisfaction, closeness, and love) as well as one negative indicator of relationship quality (i.e., conflict) each day on 5-point scales (0 = *not at all* to 4 = *a lot*). Because the positive indicators were so highly intercorrelated, we combined them into a composite variable called "relationship satisfaction" (Impett et al., 2005). In this study, the day-level α = .94 and the person-level α = .97.

Results

Data Analysis Plan. We analyzed the data using multilevel modeling with the HLM computer program (HLMwin v. 6.08; Raudenbush, Bryk, Cheong, & Congdon, 2004). We used a three-level model, in which days were nested within persons and persons were nested within couples (see Gable & Poore, 2008; Impett et al., 2010). This analysis simultaneously controls for dependencies in the same person's reports across days and between partners. All predictors (namely, daily suppression and authenticity) were centered around each individual's mean across the study. This technique, known as group-mean centering, accounts for between-person differences in suppression and assesses whether day-to-day changes from a participant's own mean in suppression are associated with changes in the outcome variable,

Table 1. Actor and Partner Effects of Daily Emotional Suppression on Well-Being and Relationship Quality

Daily outcomes	Positive emotions	Negative emotions	Satisfaction with life	Relationship satisfaction	Conflict
Actor effects	-.15***	.15***	-.27***	-.29***	.38***
Partner effects	-.11*	.13***	-.16**	-.21**	.20**

Note: All numbers are unstandardized hierarchical linear modeling coefficients.

* $p < .06$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

consequently unconfounding between- and within-person effects. Thus, the analyses were entirely within persons and within couples, controlling for individual and couple differences. All analyses were conducted with the slopes of the Level 1 predictors included as random effects at Level 2, thus allowing for the Level 1 effects to vary from person to person (Bolger, Davis, & Rafaeli, 2003). We report significant results using robust standard errors. In our tests of mediation, we used MCMAM (Selig & Preacher, 2008) with 20,000 resamples and 95% CIs to test the significance of the indirect effects. The CIs for the indirect effects were calculated according to the recommendations of Bauer, Preacher, and Gil (2006) for tests of mediation in which all Level 1 effects are entered as random.

Affective and Relational Costs for the Suppressor. Our first set of hypotheses concerned the effects of suppression on the affective experience and relationship quality of the person suppressing his or her emotions. Consistent with our predictions and as shown in Table 1, we found that on days when people suppressed their emotions when they made a sacrifice (more than they did on average when making sacrifices over the course of the 2-week study), they reported experiencing lower levels of psychological well-being, including less positive emotions, more negative emotions, and lower satisfaction with life. In addition, the quality of people's relationships suffered when they suppressed their emotions. On days when people suppressed their emotions more than they typically did across the 14-day study, they reported lower levels of relationship satisfaction and more conflict in their relationships.

We expected that the reason why people who suppressed their emotions during sacrifice reported lower well-being and decreased relationship quality is because they felt that they were not being authentic when they suppressed their emotions. To reduce the number of statistical tests (Tabachnick & Fidell, 2007), we created two composite variables to use as the outcome variables in the mediation analyses: (a) daily well-being (i.e., positive emotions, negative emotions [recoded such that higher numbers represent less negative emotions], and satisfaction with life; $\alpha = .76$) and (b) daily relationship quality (i.e., relationship satisfaction and conflict [recoded such that higher numbers represent less conflict]; $\alpha = .55$). Authenticity partially mediated the link between daily suppression and daily well-being ($ab = -.045$, $SE = .016$; 95% CI = $[-.08, -.02]$) as well as the link between

suppression and daily relationship quality ($ab = -.05$; $SE = .02$; 95% CI = $[-.09, -.02]$); both direct effects remained significant, providing evidence for partial mediation.² In short, one reason why people who suppressed their emotions when making daily sacrifices for a romantic partner experienced poorer well-being and relationship quality is because they felt as though their sacrifices were not an authentic reflection of their true selves.

Affective and Relational Costs for the Romantic Partner. We also sought to determine if suppressing emotions would be associated with the partner's daily emotional experience and feelings about the relationship. As shown in Table 1, we found that on days when people suppressed their emotions when making a sacrifice, their romantic partners reported experiencing less positive emotions (marginally significant), more negative emotions, and lower satisfaction with life. People also reported costs to their romantic relationships on days when their partners sacrificed and suppressed their emotions, including lower relationship satisfaction and more conflict.

We also tested whether feelings of authenticity mediated the effects of one person's emotional suppression during sacrifice on his or her partner's well-being and feelings about the relationship. We again used the composite outcome variables of well-being and relationship quality in these analyses to reduce the number of tests of mediation. We found that authenticity partially mediated the link between daily suppression and the partner's daily well-being ($ab = -.024$, $SE = .014$; 95% CI = $[-.06, -.001]$) as well as the link between suppression and the partner's reports of the quality of the relationship that day ($ab = -.037$; $SE = .017$; 95% CI = $[-.07, -.01]$). In short, one reason why people experienced poorer well-being and poorer quality relationships on days when their partners suppressed their emotions was because of the partner's resulting feelings of inauthenticity.

Ruling Out Alternative Hypotheses. It was again important for us to rule out the alternative hypothesis that instead of suppression leading to poorer affective and relational outcomes, the "real" cause of the poor outcomes may have been found in the circumstances or the quality of the sacrifice itself. To address this alternative hypothesis, we accounted for several additional variables, including effort, typicality, reluctance, and perceived partner needs for the sacrifice. After controlling for all four of these aspects of sacrifice, all of the

Table 2. Mean Differences in Actor and Partner Well-Being and Relationship Quality on Days With Daily Sacrifice and Low Suppression, No Daily Sacrifice, and Daily Sacrifice and High Suppression

	Daily sacrifice with low suppression	No daily sacrifice	Daily sacrifice with high suppression
Daily outcome			
Actor well-being	3.57 ^a	3.55 ^b	3.38 ^{ab}
Actor relationship quality	3.99 ^a	4.01 ^b	3.64 ^{ab}
Partner well-being	3.64 ^{ab}	3.56 ^{ac}	3.32 ^{bc}
Partner relationship quality	4.15 ^{ab}	4.00 ^{ac}	3.73 ^{bc}

Note: Superscripts denote differences between mean levels of each daily outcome variable.

associations between daily suppression and affective and relational outcomes for both partners remained significant. In addition, because all of the daily effects of suppression on well-being and relationship quality are entirely within-person, they are statistically independent of any between-person influences on the outcomes, such as relationship satisfaction, neuroticism, and habitual levels of suppression.

Comparing Days With and Without Sacrifice. The results we have reported thus far have examined the costs of suppression on days when sacrifices were made, as opposed to examining how sacrifice—with or without suppression—shapes daily emotion well-being and the quality of romantic relationships. We conducted an additional set of analyses to compare well-being and relationship quality on the following: (a) low-suppression sacrifice days (i.e., suppression scores were below the median for the sample), (b) high-suppression sacrifice days (i.e., suppression scores were above the median for the sample), and (c) nonsacrifice days (i.e., no sacrifice reported). Existing research on sacrifice has shown that willingness to sacrifice one's own immediate interests to benefit a partner enhances relationship satisfaction (e.g., Van Lange, Rusbult, et al., 1997). Drawing upon this research, we may expect to see a boost in well-being and relationship quality on days with sacrifice as compared to days with no sacrifice, that is, unless the person enacting the sacrifice suppressed his or her emotions. In other words, people may feel better about themselves and their relationships on low-suppression sacrifice days than on days when they do not sacrifice at all. However, the costs of suppressing one's emotions will likely cancel out any potential benefits of sacrifice, such that high-suppression sacrifice days will be more personally and interpersonally costly than days without sacrifice.

To test these additional hypotheses, we created dummy variables to capture three possibilities: (a) no sacrifice made (1 = *no sacrifice*; 0 = *sacrifice was made*), (b) sacrifice with high suppression (1 = *yes*; 0 = *no*), and (c) sacrifice with low suppression (1 = *yes*; 0 = *no*). We entered these dummy variables into a series of multilevel modeling equations to predict composites of actor well-being, actor relationship

quality, partner well-being, and partner relationship quality. As predicted and shown in Table 2, the results revealed that both partners experienced lower emotional well-being and relationship quality on high-suppression sacrifice days than on nonsacrifice days. The comparisons of low-suppression sacrifice days with nonsacrifice days yielded a different pattern of results for actors and partners. For actors, there were no significant differences between low-suppression sacrifice days and nonsacrifice days. However, people reported higher emotional well-being and relationship quality on days when their *partners* reported making a sacrifice with low suppression than on days when their partner did not sacrifice at all. These results suggest that any positive intentions which motivate decisions to sacrifice may have little benefit for either partner in the relationship if people suppress their emotions.

Brief Discussion

This daily experience study broadened the ecological validity of the laboratory study by examining how suppression during daily sacrifice shapes the affective experience and relationship quality of both members of romantic couples. On days when people suppressed their emotions when making sacrifices, they felt less authentic, and this lack of authenticity, in turn, had important emotional and interpersonal costs for both members of the couple. These effects could not be accounted for by within-person differences in the quality of the sacrifice, by between-person differences in personality, or by between-couple differences in overall relationship quality. Finally, suppressing emotions appeared to cancel out any potential benefits of sacrifice, as both partners reported lower emotional well-being and relationship quality on days with high suppression than on days when no relationship sacrifices were made.

Part 3: Suppression and Relationship Quality 3 Months Later

In the final part of the study, we sought to determine if the costs of suppression during sacrifice documented in the diary study were relatively short-lived or if they would persist over a longer period of time. Very little research has examined the effects of suppression as an emotion regulation strategy with longitudinal designs (for one exception, see Srivastava et al., 2009). In Part 3, we examined the effects of suppressing emotions during sacrifices made in daily life on the quality of romantic relationships as reported by both partners over a 3-month period of time.

Method

Procedure. Three months after completing the daily experience study, we recontacted both members of the couple and provided each partner with a link to a 10-min online follow-up survey.

Of the 158 participants who provided laboratory and daily experience data, 131 (83%) participants completed the follow-up survey. Participants who completed and did not complete the follow-up survey did not significantly differ in baseline relationship satisfaction or emotional suppression aggregated over the 14-day diary. After completing the follow-up survey, each member of the couple was mailed a check for US\$10.

Measures of Relationship Quality. At both baseline and the 3-month follow-up, we assessed one positive indicator of relationship quality (i.e., relationship satisfaction) as well as one negative indicator of relationship quality (i.e., thoughts about breaking up). Relationship satisfaction was assessed with five items (Rusbult et al., 1998; baseline $\alpha = .90$; follow-up $\alpha = .92$). Participants responded to such questions as “Our relationship makes me happy” on 7-point scales (0 = *strongly disagree* to 6 = *strongly agree*). Because only 13% of couples in this study broke up ($N = 8$), we could not conduct analyses using suppression to predict breakup status. We had anticipated this issue with these fairly committed couples, so we included a measure of breakup thoughts as a proxy for breaking up. To measure participants’ thoughts about breaking up with their romantic partner, four items were adapted from the Marital Instability Index (Booth, Johnson, & Edwards, 1983). As in the study by Impett et al. (2010), participants answered the following questions—“Have you or your partner ever seriously suggested the idea of breaking up?” “Have you discussed breaking up with a close friend?” and “Even people who get along quite well with their partner sometimes wonder whether their relationship is working out. Have you ever thought your relationship might be in trouble?”—on 3-point scales (0 = *never*; 1 = *within the last month*; 2 = *currently*). Participants also answered the question “Have you and your partner had a separation or broken up?” on a 2-point scale (0 = *never*, 1 = *within the last month*). We standardized each of the items before combining them into a composite measure of breakup thoughts (baseline $\alpha = .71$; follow-up $\alpha = .78$).

Results

Longer-Term Relational Costs for the Suppressor. Our first set of hypotheses concerned the link between suppressing emotions when making daily sacrifices and the quality of relationships over a 3-month period of time. We predicted that greater suppression during the 14-day diary would predict decreased relationship satisfaction and increased thoughts about breaking up 3 months later. To test these predictions, we focused on the aggregate of the daily suppression scores over the course of the 14-day diary. We expected that using an aggregate score, which included suppression assessed on multiple occasions in daily life, would provide the best measure of suppression. We used mixed models in PASW 18.0 (IBM SPSS, 2009) to analyze the dyadic data. In

each of the models, we controlled for baseline levels of both partners’ reports of the same relationship variable (e.g., relationship satisfaction at the 3-month follow-up controlling for the relationship satisfaction of both members of the couple at baseline), so that the resulting analyses would reflect changes in the quality of romantic relationships over time as a function of suppression. Consistent with our predictions, the more people suppressed their emotions over the course of the diary study, the lower their self-reported relationship satisfaction at the 3-month follow-up controlling for both partners’ baseline satisfaction ($B = -1.62, p = .008$). Suppression was also associated with having more thoughts about breaking up at the 3-month follow-up controlling for both partners’ breakup thoughts at the baseline of the study ($B = .54, p = .039$). In other words, suppressing emotions when making daily sacrifices predicted decreases in relationship satisfaction and increases in thoughts about breaking up with one’s partner over a 3-month period of time in romantic relationships. Neither of these effects was mediated by the aggregate of authenticity from the daily diary. Given that our measure of authenticity represents a sense of felt genuineness in the moment, we are not surprised that authenticity mediated the effects of suppression demonstrated in both the daily experience study and the laboratory, but did not mediate the effects of suppressing emotions on relationship quality over the course of time.

Longer-Term Relational Costs for the Romantic Partner. We also examined if suppression would be associated with the romantic partners’ reports of romantic relationship quality at the 3-month follow-up. In these analyses, aggregated suppression scores from the 14-day diary were not significantly associated with the romantic partner’s relationship satisfaction at the 3-month follow-up controlling for both partners’ satisfaction at the baseline of the study ($B = .19, p = .76$); suppression was also not associated with the partner’s breakup thoughts at the 3-month follow-up controlling for both thoughts about breaking up at baseline ($B = -.09, p = .77$).

Ruling Out Alternative Hypotheses. As in the laboratory and daily experience parts of the study, we wanted to rule out the alternative hypothesis that people make qualitatively different types of sacrifices when they suppress their emotions, possibly accounting for the documented decreases in interpersonal relationship quality over time. After controlling for aggregate scores of four aspects of daily sacrifice (i.e., effort, typicality, reluctance, and expressed needs), suppressing emotions during sacrifice remained a significant predictor of decreased relationship satisfaction and increased breakup thoughts 3 months later. The effects of aggregated suppression from the diary on both relationship quality outcomes over time remained significant after controlling for both partner’s levels of neuroticism and habitual suppression, providing a consistent pattern of results across the three

different parts of this study. Finally, both longitudinal results remained significant after controlling for the aggregate of negative emotions experienced during the daily sacrifices, suggesting that suppression influences the quality of romantic relationships over a 3-month period of time beyond the negative emotions that people may have felt when making sacrifices for a partner.

Brief Discussion

In this longitudinal part of the study, when people reported suppressing their emotions when making daily sacrifices for a romantic partner, they experienced decreases in relationship satisfaction and increases in thoughts about breaking up with their romantic partner over a 3-month period of time. Although in the daily experience study we found that emotional suppression detracted from the romantic partner's satisfaction with the relationship, suppression was not associated with the partner's feelings about the relationship over the longer-term, a point to which we will return in the discussion.

General Discussion

Several studies on close relationships have shown that sacrificing your own wishes and desires to promote the well-being of a partner or a relationship promotes relationship satisfaction and closeness, both in the moment and over the course of time in relationships (e.g., Kogan et al., 2010; Van Lange, Rusbult, et al., 1997; Wieselquist et al., 1999). The benefits of sacrifice may be especially pronounced when people sacrifice for approach motives such as to make their partner happy or promote intimacy in their relationship (Impett et al., 2005). Nevertheless, theory and research suggest that there may be some circumstances under which sacrifice is both personally and interpersonally costly (Impett et al., 2005; Rusbult & Van Lange, 1996). This study merged research on sacrifice with research on emotion regulation to test the central hypothesis that emotional suppression during sacrifice would be costly for individuals, their partners, and their romantic relationships. In a three-part, multimethod study of romantic couples, we demonstrated that sacrifice has both emotional and relationship costs when people suppress the emotions that they genuinely feel and believe that their sacrifices are not an authentic reflection of their true selves.

In the first part of the study, we examined the costs of suppression during discussions about important and meaningful sacrifices in the laboratory. Suppression was associated with increased negative emotions and decreased positive emotions for the person discussing his or her sacrifice. Furthermore, feelings of authenticity when discussing the sacrifice were an important mechanism of both of these effects. Specifically, one reason why people who suppressed their emotions experienced more negative emotions and less

positive emotions is because they felt less authentic when discussing important life sacrifices with a romantic partner. It is important to highlight that in this part of the study, we documented the costs of suppression after sacrifices had been made. It is likely that, because of the fact that we asked the couples to discuss particularly important and meaningful sacrifices, there were still lingering negative emotions related to the sacrifice that needed to be regulated. Then, the ways in which people regulated these emotions shaped their emotional experience of these important sacrifices.

In the second part of the study, we examined the costs of suppression during romantic relationship sacrifices made in daily life. Replicating and extending the results from the laboratory study, the more people suppressed their emotions when they made daily sacrifices such as running errands or giving up time spent with their own friends, the more negative emotions, less positive emotions, and poorer satisfaction with life both partners experienced on a daily basis. Suppression also interfered with relationship closeness; when people suppressed their emotions, both partners felt less satisfied and reported more daily conflict. Authenticity was a critical mechanism of the emotional and relational costs of suppression for both partners. The daily experience portion of this multimethod study was a particularly novel feature of this investigation. Although one study has documented that within-person fluctuations in suppression are associated with changes in daily well-being (Nezlek & Kuppens, 2008), this is the first study to show that daily fluctuations in suppression are associated with the quality of relationships as reported by both members of romantic dyads.

Because of the design of the daily experience study, we unfortunately could not address the question of whether the effects of suppression during sacrifice are distinct from the effects of suppression at other times. However, we could examine how sacrifice—with and without suppression—shaped daily emotions and romantic relationship quality. Both partners in the relationship experienced lower emotional well-being and relationship quality on days with sacrifice and high amounts of suppression than on days when no relationship sacrifices were made. Unfortunately, we cannot discern whether people did not sacrifice on a given day because an opportunity to make a sacrifice did not arise (i.e., no conflicting partner interests) or because people chose not to take advantage of such an opportunity (i.e., no sacrifice in the face of conflicting interests). Nevertheless, these results suggest that the emotional and relationship costs of suppression may outweigh the potential benefits of sacrifice, and further suggest that if people are going to sacrifice for a romantic partner, they should do so without suppressing their emotions—otherwise, any positive intentions that motivated the sacrifice may have little benefit for either partner.

In the third part of the study, we found that suppressing emotions impacted the quality of romantic relationships over time. Providing a conceptual replication and extension of the

findings from the laboratory and daily experience parts of the study, suppressing emotions during sacrifice predicted decreases in relationship satisfaction and increases in thoughts about breaking up with one's romantic partner 3 months later. That is, the more that people reported suppressing their emotions over the course of the 14-day daily experience study, the worse they felt about their relationships over a 3-month period of time. In addition to the study of Srivastava et al. (2009), this is one of the first studies to document the social costs of emotional suppression in a longitudinal context.

A particularly novel methodological feature of this research is that we examined the effects of one person's suppression on his or her partner's emotions and feelings about the relationship. Existing studies on emotion regulation have typically focused on the effects of suppression on the regulator, or have examined partner effects in previously unacquainted dyads (Butler et al., 2003) or peer relationships (Gross & John, 2003; Srivastava et al., 2009). Given the importance of romantic relationships for health and well-being (e.g., Kiecolt-Glaser & Newton, 2001), it was particularly important to examine the potential costs of suppression in the context of established romantic relationships as well as the effects of suppression on both partners.

At the outset of this study, we had two competing hypotheses regarding the potential influence of emotional suppression on the partner's emotions and feelings about the relationship. On one hand, previous research on suppression has not documented affective consequences for the partners with whom suppressors interact (Butler et al., 2003; Richards & Gross, 2000). On the other hand, we considered the possibility that the particular behavioral context of sacrifice may be so emotionally charged in romantic relationships that suppression will present costs even to romantic partners. Taken together, results across the three parts of the study revealed mixed evidence for the potential downsides of suppression for romantic partners. In the daily experience study, people reported lower well-being and poorer quality relationships on days when their partner suppressed their emotions while making a sacrifice. In contrast, suppression did not predict the romantic partner's emotions in the laboratory study or the partner's feelings about the relationship at the 3-month follow-up. It is possible that romantic partners may have been motivated to maintain positive impressions of the regulator and their relationship over the long term such that the short-term daily costs of suppression for romantic partners demonstrated in the daily experience part of the study may have faded over a 3-month period of time. In addition, the fact that people recalled and discussed a particularly important sacrifice in the laboratory may account for why suppressing emotions was costly when people discussed their own sacrifice but not when they listened to their partners discuss their sacrifice. While the recipient of sacrifice may have felt positive emotions such as gratitude for the partner's kind actions (Algoe, Gable, & Maisel, 2010), the person who

made the sacrifice may have been more likely to recall possible negative emotions experienced when the sacrifice was originally enacted. Future research is needed to understand the ways in which suppression in the context of sacrifice affects the emotions of both partners as well as how these effects may be different in the moment versus over longer periods of time.

Limitations, Future Directions, and Implications

Many of the participants in this study were either college students or young people from the community in relatively new relationships where feelings of satisfaction were quite high. It is possible that the effects of suppression on relationship quality may be attenuated in relationships of greater duration and commitment. For example, during periods of declining relationship satisfaction known to occur in the early child-rearing years of a marriage (e.g., Doss, Rhoades, Stanley, & Markman, 2009), suppression during sacrifice may be more commonplace. A study of married couples found that people who felt more supported by their spouses for goals that focused on avoiding negative outcomes felt more satisfied with their relationships than people who perceived less support (Molden, Lucas, Finkel, Kumashiro, & Rusbult, 2009). Drawing on this study, people in relationships of greater duration and commitment may appreciate their partner's efforts to suppress their emotions, such that suppression in the context of marriage may not be as interpersonally costly as it was for the relatively young dating couples in our sample. Future research examining the dynamics of sacrifice and emotion regulation in a more diverse range of couples is needed to extend the current study.

Although we found that suppression was associated with poorer affective and relationship outcomes, there may be some people for whom suppression is not particularly emotionally harmful. Cultural background provides one relevant example. We did not find any differences between European American and Asian participants in our sample (see Note 1), perhaps due to high levels of acculturation among ethnic minority participants. Previous research has shown that suppression is used more frequently by Asian Americans than European Americans (English, 2009) and in East Asian than Western countries (Matsumoto, Yoo, & Nakagawa, 2008). These findings may reflect a greater emphasis on expressing an authentic self in Western cultures, and conversely, a high priority placed on goals focused on maintaining interpersonal harmony in East Asian cultures (Markus & Kitayama, 1991). Based on these cultural differences, suppression may be less problematic for people from East Asian cultures who place a greater value on interdependent relationships and less value on expressing an independent self. There are also likely to be other interpersonal situations in which it may be in one's best interest to suppress emotions, such as in

relationships in which there is an unequal power dynamic between partners. Identifying the boundary conditions of the personal and social costs of suppression in the context of sacrifice is an important direction for future research.

Our theoretical framework suggests that suppressing emotions in the context of sacrifice influences emotions and relationship quality, although our findings do not provide a definitive test of this direction of causality. For example, just as suppressing emotions may lead people to feel more negative emotions and be less satisfied with their relationships, it is also possible that being in a sour mood or feeling dissatisfied with one's relationship may make people more likely to suppress their emotions when they sacrifice. Our longitudinal findings in which we controlled for baseline levels of relationship quality provide compelling evidence that suppression leads to decreases in relationship quality over a 3-month period of time. In addition, in the laboratory and daily experience parts of the study, we were careful to control for additional variables, including sacrifice severity and importance, baseline relationship quality, neuroticism, and habitual suppression to demonstrate that our effects are specific to the way that people regulate their emotions when they make a sacrifice. Previous experimental research on emotional suppression more generally supports causal links between suppression and affective experience for the suppressor and relationship quality as reported by both the suppressor and the partner (e.g., Butler et al., 2003). Nevertheless, future research in which suppression in the context of sacrifice is experimentally manipulated is needed to provide a more definitive test of the causal link between suppression during sacrifice and both affective experience and relationship quality.

This study was the first to investigate the costly effects of suppression in the specific behavioral context of sacrifice in romantic relationships. Future research would benefit from the application of an emotion regulation framework to other behaviors and processes in romantic relationships. Accommodation provides one particularly relevant example as it is defined as the willingness, when a partner has engaged in a potentially destructive behavior, to inhibit impulses toward destructive responding and, instead, to respond in a more constructive manner (Rusbult, Verette, Whitney, Slovik, & Lipkus, 1991). Indeed, inhibiting such destructive impulses requires self-control (Finkel & Campbell, 2001) and likely involves a great deal of emotion regulation. Interpersonal forgiveness provides another example of a relationship process that is relevant to emotion regulation, as acts of betrayal by a romantic partner have the power to arouse deep feelings of hostility and vengeance. Similar to acts of accommodation, granting forgiveness to a partner demands self-regulation (Exline, Worthington, Hill, & McCullough, 2003), and the ways that people regulate their emotions are likely to play a crucial role in shaping emotions and relationship happiness.

Finally, although we found support for the idea that suppression may interfere with the previous documented benefits of sacrifice (e.g., Van Lange, Rusbult, et al., 1997), other more antecedent-focused forms of emotion regulation may be less harmful (Gross, 1998). It is possible that the use of healthier emotion regulation strategies, such as cognitive reappraisal, may be more beneficial than the use of suppression or not regulating one's emotions at all. For example, when people feel reluctant to engage in a costly action on their partner's behalf, it may be beneficial to think about how the sacrifice may ultimately make the relationship better in the long term, rather than to focus on suppressing feelings of frustration in the moment. Future research is needed to delineate how a wider array of emotion regulation strategies shape the conditions under which sacrifice ultimately benefits or sours romantic relationships.

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Notes

1. The diversity of our sample enabled us to examine the possibility that the effects of suppression may be moderated by participant race/ethnicity. Eighty three of the participants in the sample self-identified as European/European American and 32 self-identified as Asian/Asian American (with the majority identifying as Chinese or Chinese American and several couples identifying as Japanese/Japanese American or Korean/Korean American). Using this subset of participants, we conducted an additional set of analyses testing culture (0 = *European/European American*; 1 = *Asian/Asian American*) as a possible moderator of the suppression effects. We realize that this strategy eliminated a substantial number of the original participants who self-identified as being of other races/ethnicities and may have limited our statistical power to detect significant moderation effects. Nonetheless, none of the race/ethnicity interaction effects in the lab, daily experience, or longitudinal parts of the study reached significance, $ps > .18$.

2. Mediation by authenticity results for each specific outcome variable were similar to the results of the analyses with the composite outcome variables.

References

- Algoe, S. B., Gable, S. L., & Maisel, N. (2010). It's the little things: Everyday gratitude as a booster shot for romantic relationships. *Personal Relationships, 17*, 117-133.
- Bauer, D. J., Preacher, K. J., & Gil, K. M. (2006). Conceptualizing and testing random indirect effects and moderated mediation in multilevel models: New procedures and recommendations. *Psychological Methods, 11*, 142-163.
- Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology, 54*, 579-616.
- Booth, A., Johnson, D., & Edwards, J. N. (1983). Measuring marital instability. *Journal of Marriage and Family, 45*, 387-394.
- Butler, E. A., Egloff, B., Wilhelm, F. H., Smith, N. C., Erickson, E. A., & Gross, J. J. (2003). The social consequences of expressive suppression. *Emotion, 3*, 48-67.
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*, 71-75.
- Doss, B. D., Rhoades, G. K., Stanley, S. M., & Markman, H. J. (2009). The effect of the transition to parenthood on relationship quality: An 8-year prospective study. *Journal of Personality and Social Psychology, 96*, 601-619.
- English, T. (2009). *Emotional suppression and social functioning in young and older adults* (Unpublished doctoral dissertation). University of California, Berkeley, CA.
- Exline, J. J., Worthington, E. L. Jr., Hill, P., & McCullough, M. E. (2003). Forgiveness and justice: A research agenda for social and personality psychology. *Personality and Social Psychology Review, 7*, 337-348.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.
- Finkel, E. J., & Campbell, K. W. (2001). Self-control and accommodation in close relationships: An interdependence analysis. *Journal of Personality and Social Psychology, 81*, 263-277.
- Gable, S. L., & Poore, J. (2008). Which thoughts count? Algorithms for evaluating satisfaction in relationships. *Psychological Science, 19*, 1030-1036.
- Gross, J. J. (1998). Antecedent- and response-focused emotion regulation: Divergent consequences for experience, expression, and physiology. *Journal of Personality and Social Psychology, 74*, 224-237.
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85*, 348-362.
- Gross, J. J., & Levenson, R. W. (1997). Hiding feelings: The acute effects of inhibiting negative and positive emotion. *Journal of Abnormal Psychology, 106*, 95-103.
- Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review, 94*, 319-340.
- IBM SPSS. (2009). *PASW (Version 18)* [Computer software]. Chicago, IL: Author.
- Impett, E. A., Gable, S. L., & Peplau, L. A. (2005). Giving up and giving in: The costs and benefits of daily sacrifice in intimate relationships. *Journal of Personality and Social Psychology, 89*, 327-344.
- Impett, E. A., & Gordon, A. (2008). For the good of others: Toward a positive psychology of sacrifice. In S. J. Lopez (Ed.), *Positive psychology: Exploring the best in people* (pp. 79-100). Westport, CT: Greenwood.
- Impett, E. A., & Gordon, A. (2010). Why do people sacrifice to approach rewards versus to avoid costs? Insights from attachment theory. *Personal Relationships, 17*, 299-315.
- Impett, E. A., Gordon, A., Kogan, A., Oveis, C., Gable, S. L., & Keltner, D. (2010). Moving toward more perfect unions: Daily and long-term consequences of approach and avoidance goals in romantic relationships. *Journal of Personality and Social Psychology, 99*, 948-963.
- Impett, E. A., Sorsoli, L., Schooler, D., Henson, J. M., & Tolman, D. L. (2008). Relationship authenticity and girls' self-esteem across adolescence. *Developmental Psychology, 44*, 722-733.
- John, O. P., & Gross, J. J. (2004). Healthy and unhealthy emotion regulation: Personality processes, individual differences, and life span development. *Journal of Personality, 72*, 1301-1333.
- John, O. P., & Srivastava, S. (1999). The big five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (2nd ed., pp. 102-138). New York: Guilford.
- Katz, J., & Joiner, T. E. (2002). Being known, intimate, and valued: Global self-verification and dyadic adjustment in couples and roommates. *Journal of Personality, 70*, 33-58.
- Kiecolt-Glaser, J. K., & Newton, T. L. (2001). Marriage and health: His and hers. *Psychological Bulletin, 127*, 472-503.
- Killen, J., & Turriel, E. (1998). Adolescents' and young adults' evaluations of helping and sacrificing for others. *Journal of Research on Adolescence, 8*, 355-375.
- Kernis, M. H., & Goldman (2006). A multicomponent conceptualization of authenticity: Research and theory. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology* (Vol. 38, pp. 284-357). San Diego, CA: Academic Press.
- Kogan, A., Impett, E. A., Oveis, C., Hui, B., Gordon, A., & Keltner, D. (2010). When giving feels good: The intrinsic benefits of sacrifice in romantic relationships for the communally motivated. *Psychological Science, 21*, 1918-1924.
- Markus, H., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review, 98*, 224-253.
- Matsumoto, D., Yoo, S. H., & Nakagawa, S. (2008). Culture, emotion regulation, and adjustment. *Journal of Personality and Social Psychology, 94*, 925-937.
- Mauss, I. B., Bunge, S. A., & Gross, J. J. (2007). Automatic emotion regulation. *Social and Personality Psychology Compass, 1*, 146-167.
- Molden, D. C., Lucas, G. M., Finkel, E. J., Kumashiro, M., & Rusbult, C. (2009). Perceived support for promotion-focused and

- prevention-focused goals: Associations with well-being in unmarried and married couples. *Psychological Science*, 20, 787-793.
- Nezlek, J. B., & Kuppens, P. (2008). Regulating positive and negative emotions in daily life. *Journal of Personality*, 76, 561-579.
- Noller, P. (1996). What is this thing called love? Defining the love that supports marriage and family. *Personal Relationships*, 3, 97-115.
- Powell, C., & Van Vugt, M. (2003). Genuine giving or selfish sacrifice? The role of commitment and cost level upon willingness to sacrifice. *European Journal of Social Psychology*, 43, 403-412.
- Raudenbush, S. W., Bryk, A. S., Cheong, Y. F., & Congdon, R. T. (2004). *HLM 6: Hierarchical linear and nonlinear modeling*. Chicago, IL: Scientific Software International.
- Reis, H. T., & Shaver, P. (1988). Intimacy as an interpersonal process. In S. W. Duck (Ed.), *Handbook of personal relationships* (pp. 367-389). New York: John Wiley.
- Richards, J. M., & Gross, J. J. (2000). Emotion regulation and memory: The cognitive costs of keeping one's cool. *Journal of Personality and Social Psychology*, 79, 410-424.
- Rogers, C. (1961). *On becoming a person: A therapist's view of psychotherapy*. Boston, MA: Houghton Mifflin.
- Rusbult, C. E., Martz, J. M., & Agnew, C. R. (1998). The investment model scale: Measuring commitment level, satisfaction level, quality of alternatives, and investment size. *Personal Relationships*, 5, 357-391.
- Rusbult, C. E., & Van Lange, P. A. M. (1996). Interdependence processes. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 564-596). New York: Guilford.
- Rusbult, C. E., Verette, J., Whitney, G. A., Slovik, L. F., & Lipkus, I. (1991). Accommodation processes in close relationships: Theory and preliminary empirical evidence. *Journal of Personality and Social Psychology*, 60, 53-78.
- Selig, J. P., & Preacher, K. J. (2008). *Monte Carlo method for assessing mediation: An interactive tool for creating confidence intervals for indirect effects* [Computer software]. Retrieved from <http://quantpsy.org/>
- Sheldon, K. M., Ryan, R. M., Rawsthorne, L. J., & Ilardi, B. (1997). Trait self and true self: Cross-role variation in the big-five personality traits and its relations with psychological authenticity and subjective well-being. *Journal of Personality and Social Psychology*, 73, 1380-1393.
- Srivastava, S., Tamir, M., McGonigal, K. M., John, O. P., & Gross, J. J. (2009). The social costs of emotional suppression: A prospective study of the transition to college. *Journal of Personality and Social Psychology*, 96, 883-897.
- Swann, W. B., De La Ronde, C., & Hixon, J. G. (1994). Authenticity and positivity strivings in marriage and courtship. *Journal of Personality and Social Psychology*, 66, 857-869.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston, MA: Pearson.
- Van Lange, P. A. M., Agnew, C. R., Harinck, R., & Steemers, G. E. (1997a). From game theory to real life: How social value orientation affects willingness to sacrifice in ongoing close relationships. *Journal of Personality and Social Psychology*, 73, 1330-1344.
- Van Lange, P. A. M., Rusbult, C. E., Drigotas, S. M., Arriaga, X. M., Witcher, B. S., & Cox, C. L. (1997b). Willingness to sacrifice in close relationships. *Journal of Personality and Social Psychology*, 72, 1373-1395.
- Whitton, S. W., Stanley, S. M., & Markman, H. J. (2007). If I help my partner, will it hurt me? Perceptions of sacrifice in romantic relationships. *Journal of Social and Clinical Psychology*, 26, 64-92.
- Wieselquist, J., Rusbult, C. E., Foster, C. A., & Agnew, C. R. (1999). Commitment, pro-relationship behavior, and trust in close relationships. *Journal of Personality and Social Psychology*, 77, 942-966.
- Wood, A. M., Linley, P. A., Maltby, J., Baliouis, M., & Joseph, S. (2008). The authentic personality: A theoretical and empirical conceptualization and the development of the authenticity scale. *Journal of Counseling Psychology*, 55, 385-399.
- Zhang, Z., Zyphur, M. J., & Preacher, K. J. (2009). Testing multilevel mediation using hierarchical linear models: Problems and solutions. *Organizational Research Methods*, 12, 695-719.