

Levels and Volatility in Daily Relationship Quality: Roles of Daily Sacrifice Motives

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Abstract

Conflicts are inevitable in romantic relationships. Couples sometimes choose the pro-relationship strategy of relational sacrifice to address such conflicts. Previous research established that examining sacrifice motives (i.e., approach and avoidance) is meaningful in understanding relationship quality. Using interdependence theory and 14 days of diaries with 110 heterosexual couples, we extend previous research by testing how sacrifice motives predicted both mean levels and volatility of daily relationship quality (i.e., satisfaction, commitment, intimacy, passion, trust, love). Specifically, we examined actor and partner reports of sacrifice motives as individuals' average levels (trait; between-person differences) and daily levels of sacrifice motives on a specific day (state; within-person differences) in predicting relationship quality. When predicting *mean levels* of relationship quality, individuals' own (actor) trait and state approach and avoidance motives predicted most relationship quality variables. Results were less robust for partner effects, especially for partner trait and state approach motives. When predicting *volatility* (within-person variability across 14 days) in relationship quality, patterns were more robust for both approach and avoidant motives and for both actor and partner effects. For approach sacrifices, and for all six relationship quality variables, individuals' trait approach motives predicted lower volatility, whereas avoidance motives predicted higher volatility. For partner effects, individuals reported lower volatility in satisfaction, intimacy, passion, and trust when their partners were higher in approach motives, whereas they reported higher volatility in satisfaction, commitment, intimacy, and trust when their partners were higher in avoidance motives. We discuss the importance of studying dyads and testing the associations between sacrifice motives and daily relationship quality - both levels and volatility.

Keywords: daily diary, interdependence theory, relationship quality, sacrifice motives, volatility

Levels and Volatility in Daily Relationship Quality: Roles of Daily Sacrifice Motives

Romantic partners experience conflicts of interests in their relationships (Braiker & Kelley, 1979; Kelley, 1979). Relational sacrifices are one way partners can address these conflicts (Finkel & Rusbult, 2008). Sacrifices are pro-relationship strategies, or behavioral choices driven by the interest to benefit one's relationship or partner, even though such preferences may conflict with one's own immediate desires (Finkel & Rusbult, 2008). Although potentially costly, sacrificing for one's partner allows individuals to move beyond their own desires and forgo self-interest in favor of partner-focused motives for behavior, which should offer relational benefits (Kelley, 1979).

To better understand the relationship quality of individuals, their motives for relational sacrifices should be considered, as different motives have varying patterns of associations with relationship quality. *Approach motives* are focused on obtaining positive outcomes, like a partner's happiness or enhanced relational intimacy, and often have positive associations with relationship quality (Cooper, Totenhagen, McDaniel, & Curran, 2017; Righetti & Impett, 2017). In contrast, *avoidance motives* are focused on evading negative outcomes like relational conflict and often have negative associations with relationship quality (Cooper et al., 2017; Righetti & Impett, 2017). We examine actor and partner reports of sacrifice motives in association with both mean levels and volatility in daily relationship quality (i.e., satisfaction, commitment, intimacy, passion, trust, and love) in heterosexual couples in the U.S. Volatility in relationship quality is conceptualized as within-person variability or change across 14 days in daily relationship quality.

Drawing from interdependence theory (Kelley, 1979), we use the Actor Partner Interdependence Model (APIM; Cook & Kenny, 2005) to examine both actor effects (how one's

behaviors impact one's own outcomes) and partner effects (how one's partner's behaviors impact one's outcomes) by conducting a daily diary approach. Daily diary studies, or micro-longitudinal assessments, are important for untangling the lives of individuals in dyadic relationships, because they provide an understanding of couples' relational quality changes as they unfold (Bolger, Davis, & Rafaeli, 2003).

Accordingly, we take a nuanced approach to understanding how relational sacrifice motives both at the *trait* level (i.e., individuals' average levels of sacrifice motives across 14 days, or variation between individuals) and at the *state* level (i.e., individuals' changes around their individual mean level of sacrifice motives on a specific day, or within-person differences; Bolger & Laurenceau, 2013) are associated with daily relationship quality. We also examine the associations between sacrifice motives and *volatility* in daily relationship quality. Predicting volatility from between-person, or trait relational sacrifice motives, allows us to understand whether some individuals experience more variability (i.e., less stability) or less variability (i.e., more stability) in relationship quality from day to day across 14 days.

We also assess six unique types of daily relationship quality constructs: satisfaction, commitment, intimacy, passion, trust, and love. The additional constructs beyond satisfaction and commitment are intended to provide a more comprehensive understanding of the associations between sacrifice motives and individuals' relationship quality; as Fletcher, Simpson, and Thomas (2000) indicated, "an individual may love his or her partner passionately, be highly committed to the relationship, but not trust the partner and, thus, be dissatisfied. Conversely, another individual may be replete with commitment and trust but feel disillusioned about the disappearance of passion in the relationship. (p. 341)". A more global investigation of relationship quality might mask changes in the underlying constructs because partners may

report similar global evaluations of relationship quality but experience each latent construct differently. Therefore, the inclusion of these six constructs permits a more detailed understanding of the ways in which relational sacrifice motives may differentially predict quality constructs beyond the more commonly assessed constructs of satisfaction or commitment (Cooper et al., 2017; Righetti & Impett, 2017).

Interdependence Theory: Relational Sacrifices and Relationship Quality

Conflicts of interest occur frequently between partners (Braiker & Kelley, 1979) and are often stressful. When romantic partners find themselves having conflicts of interests with one another, they often experience greater stress, greater negative affect, and lower relationship satisfaction compared to situations in which they do not have these conflicts of interest (Righetti & Impett, 2017). Still, conflicts of interest also provide opportunities for partners to engage in pro-relationship strategies, such as relational sacrifice. Here, we focus on relational sacrifice *motives* because they serve fundamentally different purposes in romantic relationships, such as pursuing goals and incentives that benefit the relationship (approach motives) and managing any threats to the relationship (avoidance motives) (Carver, Sutton, & Scheier, 2000). Further, a refined understanding of relational sacrifice motives will help illuminate strategies that partners may use to improve or detract from relational well-being (Gable & Impett, 2012).

Understanding the motives individuals have when sacrificing is important in understanding how such intentions benefit or undermine romantic relationships (Righetti & Impett, 2017). Drawn from both interdependence theory (Kelley, 1979) and approach-avoidance motivational theory (Carver et al., 2000), generally, *approach motives* demonstrate goodwill toward the partner and can enhance positive feelings toward the relationship for both partners (Righetti & Impett, 2017). Approach motives for relational sacrifice are most often associated

with increased levels of relationship quality, such as higher commitment, satisfaction, closeness, and connection (Cooper et al., 2017; Righetti & Impett, 2017). Theoretically, these associations should extend beyond the individual (actor effects) to the partner as well (partner effects), but researchers do not always include partners in studies of sacrifice motives (Mattingly & Clark, 2012). Further, in studies that have assessed partner effects, patterns of association between partner sacrifice motives and levels of relationship quality have not always been found (Cooper et al., 2017; Muise, Impett, & Desmarais, 2013).

In contrast to approach motives, *avoidance motives* demonstrate a greater focus on evading negative outcomes such as conflict with their partner, the potential loss of the relationship, or possible guilt after following their own interests at the expense of their partner's interests (Righetti & Impett, 2017). Avoidance motives for relational sacrifice are most often associated with decreased levels of relationship quality, such as lower commitment, satisfaction, closeness, and connection (Cooper et al., 2017; Righetti & Impett, 2017). There is also some evidence for partner effects. The more individuals reported sacrificing for avoidance motives over two weeks, the lower were their partner's levels of relationship quality (Impett, Gable, & Peplau, 2005). Similarly, the more individuals engaged in sex for avoidance motives, the less committed their partners were (Muise et al., 2013). Patterns of association for avoidance motives and lower relationship quality (usually for actor effects) may be more consistent than the patterns for approach motives and greater relationship quality (Muise et al., 2013), perhaps because negative experiences can carry more weight than positive experiences (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001). On the other hand, other research failed to find significant partner effects for avoidant sacrifices (Cooper et al., 2017). These mixed results may be due to individuals not perceiving their partners' avoidance motives for sacrificing. Individuals may

perceive their partner's sacrifice as a generous gesture despite their partner's intentions. If so, this generosity may lead to feelings of gratitude, as often occurs when an individual receives benefits from another person (Visserman, Righetti, Impett, Keltner, & Van Lange, 2017). Thus, the effects that partner avoidance motives have on individuals' relationship quality may not be as clear as they are for partner approach motives (Impett, Gere, Kogan, Gordon, & Keltner, 2014).

A more comprehensive analysis of the associations between partners' sacrifice motives and their relationship quality over a 14-day period may help explain the mixed results of previous studies. Here, we extend the work of previous researchers by providing an in-depth look at these associations by investigating how partners' average levels of sacrifice motives (trait) relate to their overall levels of relationship quality (between-person differences) and how their levels of sacrifice motives on a specific day (state) relate to their levels of relationship quality on that same day (within-person differences). In addition, because previous studies have primarily focused on average levels of a single relationship quality construct, as we reviewed previously, we examine the volatility partners experience in six different constructs of relationship quality (i.e., satisfaction, commitment, intimacy, passion, trust, and love).

Although researchers have revealed patterns of associations that are consistently more robust for actor effects vs. for partner effects between sacrifice motives and relationship quality, we draw from interdependence theory (Kelley, 1979) and put forward the following hypotheses for *levels, or fixed effects* of relationship quality:

Hypotheses for *trait* approach motives:

When individuals (H1a) or their partners (H1b) report higher trait *approach* motives, individuals will report higher overall levels of positive daily relationship quality (i.e., greater satisfaction, commitment, intimacy, passion, trust, and love).

When individuals (H2a) or their partners (H2b) report higher trait *avoidance* motives, individuals will report lower overall levels of positive daily relationship quality.

Hypotheses for *state* approach motives:

On days in which individuals (H3a) or their partners (H3b) report higher than average state *approach* motives, they will report higher levels of positive daily relationship quality.

On days in which individuals (H4a) or their partners (H4b) report higher than average state *avoidance* motives, they will report lower levels of positive daily relationship quality.

Sacrifice Motives and Volatility in Relationship Quality

In the literature just described, findings were specific to sacrifice motives and *levels* of relationship quality, rather than sacrifice motives and *volatility*, or change, in relationship quality over time. Relationship quality for constructs including satisfaction, commitment, closeness, and love varies from day to day (Totenhagen, Butler, Curran, & Serido, 2016).

Research demonstrates that higher levels of relationship quality are often beneficial and lower levels of relationship quality are often disadvantageous for the relational partners. In comparison, volatility (within-person variability across 14 days, as we assessed in this study) in relationship quality seems uniquely detrimental for relational partners (Arriaga, 2001; Arriaga, Reed, Goodfriend, & Agnew, 2006; Campbell, Simpson, Boldry, & Rubin, 2010) as volatility in relationship quality may signal relational turbulence or instability (see review by Eastwick, Finkel, & Simpson, 2019). Daily volatility in relationship quality predicts greater reports of distress and destructive couple interactions (Campbell et al., 2010); weekly volatility predicts eventual relationship dissolution (Arriaga, 2001) and greater depressive symptoms (Whitton & Whisman, 2010); and volatility over a more extended amount of time (i.e., every 4 months for 2 years) predicts diminished life satisfaction (Whitton, Rhoades, & Whisman, 2014).

As volatility seems uniquely detrimental for relational partners, it is important to understand what patterns of relational sacrifice motives predict increased or decreased volatility. Individuals who report higher *levels* of approach motives and lower *levels* of avoidance motives have higher overall relationship quality, and these associations hold on a daily basis (Righetti & Impett, 2017). Examining what predicts *levels* of relationship quality; however, *does not explain whether these levels remain constant from day to day*. Because high volatility in relationship quality has potentially detrimental effects *beyond* levels of relationship quality (Arriaga, 2001, Campbell et al., 2010; Eastwick et al., 2019), it is essential to understand what characteristics in individuals and partners promote more stability (i.e., less volatility) in relationship quality. Therefore, we examine whether people who have higher trait levels of approach motives, and lower trait levels of avoidance motives, report less volatility in relationship quality from day to day. If so, then the case to promote approach motives and discourage avoidance motives in couples is particularly compelling because such patterns could improve and sustain relational partners' levels of relationship quality.

To illustrate an example in which both levels and volatility (within-person variability across 14 days) in relationship quality were examined, consider the following: In one daily diary study of sacrifices (i.e., frequency, ease, awareness of sacrifices), 12 possible patterns of actor and partner effects were identified between each of the sacrifice predictors and daily commitment (6 patterns for levels and 6 patterns for volatility). Results indicated that only 16.6% of associations for *levels* of commitment were significant, with higher ease and awareness of sacrifices associated with higher daily commitment. On the other hand, 83.3% of associations for *volatility* were significant, with lower frequency and higher ease and awareness of sacrifices associated with lower volatility in daily commitment (Akçaboza, McDaniel, Corkery, & Curran

2017). The more robust patterns of volatility vs. levels of relationship quality were also evident in a study of the associations between emotion work (e.g., activities relevant to the enhancement of a partner's emotional well-being and the giving of emotional support) and relationship quality (Curran, McDaniel, Pollitt, & Totenhagen, 2015). For partner effects, 16.6% were significant for levels of relationship quality, whereas 50% were significant for volatility in relationship quality (Curran et al., 2015).

Together, these patterns from the two previous empirical studies suggest that examining volatility in relationship quality (*over and above the inclusion of levels in relationship quality*) extends our knowledge of the repeated, everyday experiences of couples and fosters understanding of what is both beneficial vs. detrimental to relational partners from day to day. Further, examining volatility in relationship quality may illuminate *why* there has been limited or mixed evidence for partner effects in associations between sacrifice motives and relationship quality.

Drawing upon interdependence theory (Kelley, 1979), as well as empirical literature linking relational sacrifices (frequency, ease, and awareness of sacrifices; Akçaboza et al., 2017) and emotion work (Curran et al., 2015) with volatility in relationship quality constructs, we put forward the following hypotheses specific to *volatility* in relationship quality:

When individuals (H5a) or their partners (H5b) are higher in trait *approach* motives, individuals will have lower volatility in positive daily relationship quality (i.e., satisfaction, commitment, intimacy, passion, trust, and love).

When individuals (H6a) or their partners (H6b) are higher in trait *avoidance* motives, individuals will have higher volatility in positive daily relationship quality.

Method

Participants

We recruited 110 heterosexual couples ($N = 220$ individuals) through undergraduate Family Studies and Human Development and Communication classes at a large Southwestern university. Students were offered extra credit to participate with their partner, or they could invite a couple to participate (parents, friends, roommates). Participants had to be at least 18 years old, in a romantic relationship for at least six weeks, and both individuals in the couple needed to have at least three matching days of data (as has been done in other diary studies; Totenhagen et al., 2016). Most participants were Caucasian (80.5%), and most were never married but in a dating relationship (61.8%), followed by married (32.8%). They were also diverse in age ($M = 29$, $SD = 13.93$, range: 18-81 years).

Procedure

Participants completed demographic information, followed by 14 days of daily surveys about relational sacrifice motives and relationship quality. Couples who met the eligibility criteria completed an average of 10.66 days.

Daily Sacrifice Motives. As independent variables, we asked about daily approach and avoidant motives for sacrifices. At the beginning of the daily survey, participants were asked to think about things they had done or given up for their partner (i.e., a sacrifice; “Did you decide to do or give up in the past 24 hours?”; 1 = Yes; 2 = No).

Next, participants completed a scale in which they were asked to rate the importance of each of 10 daily approach (e.g., “To make my partner happy”, $\alpha = .80$; 5 items) and avoidance (e.g., “To avoid feeling guilty”, $\alpha = .93$; 5 items) motives for sacrifice in influencing their decision to “do or give up” something for their partner (i.e., sacrifice motivations) using Impett et al.’s (2005) 7-point Likert type scale (1 = *Not all important*, 7 = *Extremely important*).

To be clear, each day individuals and their partners were asked about their daily motives for sacrifice; both on days in which they reported a sacrifice and on days in which they did not report a sacrifice. We created both trait (between-person) and state (within-person) versions of their approach and avoidance motives. We created the trait version by computing each participant's mean across the 14 days of the study (for actor and partner approach, $M = 5.08$, $SD = 0.93$; for actor and partner avoidance, $M = 3.91$, $SD = 1.54$). This individual average (trait) score was grand-mean centered for analyses (Aiken & West, 1991). We created the state version by subtracting each participant's average from their daily scale score to person-center the variable for analyses. Higher scores on trait sacrifice motives represent greater average sacrifice motives across two weeks, and higher scores on state sacrifice motives represent greater sacrifice motives on a particular day than one's own average level of sacrifice motives across two weeks.

Daily Relationship Quality. As dependent variables, we assessed daily relationship quality with six Likert type scales from Fletcher et al. (2000) with three items per scale: satisfaction (e.g., "How content are you with your relationship", $\alpha = .93$), commitment (e.g., "How dedicated are you to your relationship?", $\alpha = .91$), intimacy (e.g., "How close is your relationship?", $\alpha = .80$), passion (e.g., "How lustful is your relationship?", $\alpha = .89$), love (e.g., "How much do you adore your partner?", $\alpha = .87$), and trust ("How much can you count on your partner?", $\alpha = .91$). Higher scores on satisfaction, commitment, intimacy, passion, love, and trust represent greater daily relationship quality.

Controls. We included five control variables: gender (-0.5 = women; 0.5 = men), actual daily sacrifice (-0.5 = No; 0.5 = Yes), ethnicity (-0.5 = other than White; 0.5 = White), education level (-0.5 = high school graduation or less; 0.5 = some college or more), and relationship length (in years). We mean-centered relationship length and effect-coded gender, actual daily sacrifice,

ethnicity, and education level. Because these controls were effect-coded, significant effects for the study constructs can be interpreted as pooled across gender, ethnicity, education, and whether a sacrifice was performed that day. We chose these control variables because relationship quality can vary based on an individual's gender, relationship length, education level, and ethnicity (e.g., Akçabozan et al, 2017; Impett et al., 2005; Young, Curran, & Totenhagen, 2012). Further, controlling for performance of actual sacrifices helps to ascertain that it was sacrifice *motives*, as opposed to having done a sacrifice, that predicted variation in relationship quality.

Plan of Analysis

Our data included distinguishable dyads across 14 days, with individuals (women and men) nested within couples and crossed with time. We analyzed six separate multilevel models; one for each daily relationship quality construct variable (i.e., satisfaction, commitment, intimacy, passion, trust, and love). We implemented multilevel modeling (MLM) using Proc Mixed in SAS to account for the nonindependence between partners as well as repeated days within participants. People reported an average number of days with sacrifices of 6.86 ($SD = 4.13$, range = 0-16). Total observations used in the models ranged from 1,793 to 1,794. We used APIMs (Cook & Kenny, 2005) within MLM to examine both actor and partner effects. To examine our hypotheses, first, we entered the aforementioned control variables into the model line of each of the models. To examine levels of relationship quality (Hypotheses 1-4), we entered actors' and partners' trait and state sacrifice motives (approach and avoidance) into the model line of each of the six models. To examine volatility in daily relationship quality (Hypotheses 3-4), we entered actors' and partners' trait sacrifice motives on the repeated line in PROC MIXED as recommended by Hoffman (2007). The residual variability was exponentiated to allow for linear prediction of the variance component by sacrifice motives.

Results

We report descriptive statistics (Table 1) and correlations (Table 2) for all the study variables. All correlations were in expected directions. In each of the multilevel models, we examined how trait and state sacrifice motives (approach and avoidance) for individuals and partners predicted daily relationship quality (i.e., fixed effects) and how trait sacrifice motives for individuals and partners predicted volatility (i.e., within-person variability across 14-days) in relationship quality. All of these tests were performed simultaneously in the models. In Table 3, we report the unstandardized estimates with standard errors from the results of our six separate MLMs. In the following sections, we summarize the associations between trait and state sacrifice motives and levels of relationship quality (H1a and b, H2a and b, H3a and H3b, H4a and H4b), and trait sacrifice motives and volatility in relationship quality (H5a and b, H6a and b), respectively.

Levels of Relationship Quality and Trait Sacrifice Motives (Hypotheses 1a, 1b, 2a, 2b)

First, starting with the controls: Actual daily sacrifice (versus not doing a sacrifice that day) positively predicted relationship quality (except for trust). On days individuals reported doing a sacrifice, they reported greater daily satisfaction ($b = .10, p = .00$), commitment ($b = .05, p = .03$), intimacy ($b = .08, p = .03$), passion ($b = .12, p = .01$), and love ($b = .09, p = .00$) than when they did not perform the sacrifice. Relationship length negatively predicted daily intimacy ($b = -.02, p = .01$) and passion ($b = -.04, p = .00$). Gender, educational level, and ethnicity did not differ in explaining levels of relationship quality.

When individuals (H1a) or their partners (H1b) report higher trait approach motives, individuals will report higher overall levels of positive daily relationship quality (i.e., greater satisfaction, commitment, intimacy, passion, trust, and love).

H1a was supported with significant associations between actor trait approach motives and satisfaction ($b = .31, p = .00$), commitment ($b = .27, p = .00$), intimacy ($b = .30, p = .00$), trust ($b = .32, p = .00$), and love ($b = .29, p = .00$). When individuals reported higher trait approach motives, they reported greater relationship quality across all constructs except passion. No partner effects of trait approach motives were significant for any of the outcomes, and therefore H1b was not supported.

When individuals (H2a) or their partners (H2b) report higher trait avoidance motives, individuals will report lower overall levels of positive daily relationship quality.

We found support for each of these hypotheses. For actor effects (H2a), when individuals reported higher trait avoidance motives, they reported lower levels of satisfaction ($b = -.18, p = .00$), commitment ($b = -.17, p = .00$), intimacy ($b = -.13, p = .01$), trust ($b = -.15, p = .01$), and love ($b = -.12, p = .00$). Passion was not significant. For partner effects (H2b), when their partners reported higher trait avoidance motives, individuals reported lower levels of daily satisfaction ($b = -.11, p = .03$), commitment ($b = -.10, p = .01$), trust ($b = -.18, p = .00$), and love ($b = -.09, p = .03$). Passion and intimacy were not significant.

Levels of Relationship Quality and State Sacrifice Motives (Hypotheses 3a, 3b, 4a, 4b)

On days in which individuals (H3a) or their partners (H3b) report higher than average state approach motives, they will report greater levels of positive daily relationship quality.

We found support for each of these hypotheses. For actor effects (H3a), results indicated that on days individuals reported higher than average approach motives, they reported greater levels of satisfaction ($b = .16, p = .000$), commitment ($b = .11, p = .00$), intimacy ($b = .16, p = .00$), passion ($b = .18, p = .00$), trust ($b = .12, p = .00$), and love ($b = .12, p = .00$) that day. For partner effects (H3b), we only found support for satisfaction ($b = .04, p = .02$), which indicated

individuals reported greater satisfaction on the days their partners reported higher than average approach motives.

On days in which individuals (H4a) or their partners (H4b) report higher than average state avoidance motives, they will report lower levels of positive daily relationship quality.

H4a was supported and the results indicated that on days individuals reported higher than average avoidance motives, they reported lower levels of satisfaction ($b = -.06, p = .00$), intimacy ($b = -.04, p = .00$), and trust ($b = -.03, p = .00$) that day. Commitment, passion, and love were not significant. For partner effects (H4b), we only found support for satisfaction ($b = -.03, p = .03$), which indicated individuals reported lower satisfaction on the days their partners reported higher than average avoidance motives.

In sum, actor trait approach and avoidance motives were robust in predicting levels of relationship quality, as it was significant with all outcomes (except passion). On the other hand, partner trait avoidance motives were more robust in predicting levels of relationship quality than approach motives. In terms of state approach and avoidance motives, actor effects more robustly predicted levels of relationship quality while partner effects were only significant when predicting daily levels of satisfaction.

Volatility in Relationship Quality (Hypotheses 5a, 5b, 6a, 6b)

First, starting with gender; there were some gender differences in volatility. Men reported more volatility in commitment than women ($b = .36, p = .00$), but lower volatility in intimacy ($b = -.16, p = .03$), and trust ($b = -.29, p = .00$). No other controls significantly differed in explaining volatility in relationship quality.

When individuals (H5a) or their partners (H5b) are higher in approach motives, individuals will have lower volatility in positive daily relationship quality.

H5a was fully supported with significant associations between higher actor approach sacrifice motives and lower volatility in daily satisfaction ($b = -.34, p = .00$), commitment ($b = -.72, p = .00$), intimacy ($b = -.42, p = .00$), passion ($b = -.53, p = .00$), trust ($b = -.36, p = .00$), and love ($b = -.73, p = .00$). H5b was mostly supported (commitment and love were the exceptions) with significant associations between higher partner approach sacrifice motives and lower volatility in daily satisfaction ($b = -.39, p = .00$), intimacy ($b = -.27, p = .00$), passion ($b = -.13, p = .04$), and trust ($b = -.25, p = .00$).

When individuals (H6a) or their partners (H6b) are higher in avoidance motives, individuals will have higher volatility in positive daily relationship quality.

H6a was fully supported, with significant associations between higher actor avoidance sacrifice motives and higher volatility in daily satisfaction ($b = .31, p = .00$), commitment ($b = .40, p = .00$), intimacy ($b = .15, p = .00$), passion ($b = .27, p = .00$), trust ($b = .42, p = .00$), and love ($b = .48, p = .00$). H6b was mostly supported (passion and love were the exceptions) with significant associations between higher partner avoidance sacrifice motives and higher volatility in daily satisfaction ($b = .23, p = .00$), commitment ($b = .21, p = .00$), intimacy ($b = .13, p = .00$), and trust ($b = .16, p = .00$).

Discussion

Drawing from interdependence theory and using a daily diary design, we examined how individuals' average (trait; between-person differences) and daily (state; within-person differences) sacrifice motives (approach and avoidance) predicted six different relationship quality constructs (satisfaction, commitment, intimacy, passion, trust, and love). We also examined how trait sacrifice motives predicted volatility (within-person variability across 14 days) in relationship quality among a sample of heterosexual couples.

Summary of Findings

We found five overall patterns in our results, all in the predicted directions: (1) Actors' trait approach and avoidance motives explained their levels of and volatility in most of the relationship quality constructs; only the associations between actors' trait approach and avoidance motives and their levels of passion were not significant; (2) Partners' trait avoidance motives explained respondents' levels of relationship quality more than partners' trait approach motives, but partners' trait approach and avoidance motives did explain respondents' volatility in many of the relationship quality constructs; five out of the six associations were significant; (3) Actors' state approach motives explained all of the relationship quality constructs, whereas actors' state avoidance motives only explained satisfaction, intimacy, and trust; (4) Partners' state approach and avoidance motives only explained respondents' satisfaction levels; and (5) The most frequent significant results between sacrifice motives and relationship quality (considering both levels and volatility and actor and partner effects) were for satisfaction, with the least significant results for passion. In the following, we discuss these patterns of results in more detail.

Fixed effects in daily relationship quality. Higher average levels of approach motives (trait) for individuals (actor effects) positively predicted all outcomes (except passion), whereas higher average levels of avoidance motives negatively predicted all outcomes (except passion H1a, H2a). That is, a trait tendency to sacrifice to improve one's relationship predicted better relationship quality outcomes, whereas a trait tendency to sacrifice to escape negative outcomes predicted poorer relationship quality outcomes. These findings replicate those of other studies that have demonstrated associations between sacrifices motives and levels of satisfaction, commitment, and love for individuals (Cooper et al., 2017; Impett et al., 2014; Righetti &

Impett, 2017). We extended the existing literature by examining four additional relationship quality constructs beyond satisfaction and commitment (Fletcher et al., 2000) that elucidated sacrifice motives can also explain individuals' intimacy and trust.

Now considering patterns for state levels of sacrifice motives and levels of relationship quality, actors' state approach motives explained all of the relationship quality outcomes, but results now only partially significant for avoidant motives (H3a, H3b). On days when individuals reported higher approach motives than their norm, they reported greater relationship quality on all six of the constructs. On the other hand, on days when individuals reported higher avoidance motives than their norm, they reported lower relationship quality on half of the constructs: satisfaction, intimacy, and trust.

Considered together, we conclude that (1) both trait and state levels of *approach* motives provide benefits for individuals in terms of better relationship quality (except passion for trait approach motives) and (2) both trait and state levels of *avoidance* motives across two weeks were detrimental for individuals in terms of lower relationship quality (except passion for trait and commitment, passion, and love for state avoidant motives).

Noting that passion was nonsignificant in both of the two patterns above, this may be explained by considering that passion is an internal and individual perception of attraction, arousal, and romance to a partner including more personal meanings than relational compared to other relationship quality variables (e.g., intimacy, Gao, 2001). Moreover, this result is also consistent with Sternberg's (1986) perspective in that passion might function differently than commitment and intimacy (e.g., intimacy and passion need not always covary positivity; some people find that intimacy interferes with the attainment of sexual fulfillment).

While the pattern of results for actor effects were fairly robust, partner effects were mostly limited to avoidance motives. Unexpectedly, we did not find any support for partner effects in the associations between trait approach motives and relationship quality levels (H1b), indicating that individuals did not experience better relationship quality when their partners had higher trait approach motives. Given the mixed patterns for partner approach motives in other studies (Cooper et al., 2017; Impett et al., 2014; Muise et al., 2013), the benefits of partner approach motives need further investigation. In contrast, partners' trait avoidance motives (H2b) negatively predicted satisfaction, commitment, trust, and love. Thus, for both actor and partner effects, satisfaction, commitment, trust, and love were the central relationship quality constructs associated with trait avoidance motives.

When looking at state approach and avoidance sacrifice motives, partner effects were again limited (H3b, H4b), with two findings, both specific to satisfaction. We found that (1) individuals were more satisfied on days when their partners reported higher than usual approach motives and (2) were less satisfied on days when their partners reported higher than usual avoidance motives. Our limited partner effects were not surprising. Previous studies have also found partner effects are less common than actor effects, nonexistent, or mixed (Akçaboğan et al., 2017; Curran et al., 2015; Totenhagen, Curran, Serido, & Butler, 2013). Additionally, based on the perspective that individuals often overestimate their investment in their relationship while underestimating their partners' (Kelly, 1979), individuals may weigh their own sacrifices, whatever their motives, as more consequential than their partners', except when their partner sacrifices with greater than normal avoidance motives.

Considered together, we conclude that understanding the fixed effects (i.e., trait and state) between actors' and partners' sacrifice motives and relationship quality has utility, especially

given the robust patterns of significant associations between individuals' approach and avoidance motives and their relationship quality.

Volatility in daily relationship quality. For actor effects, higher trait *approach* (H5a) and *avoidance* (H6a) motives predicted volatility in all six relationship quality outcomes in the predicted directions. These patterns were similar but slightly more robust than the patterns for trait approach and avoidant motives for fixed effects (H1a and H2a in which 10 of 12 were significant) demonstrating that sacrificing with approach motives is beneficial to oneself in terms of lower variability (i.e., greater stability), whereas sacrificing with avoidance motives is detrimental to oneself in terms of higher variability (i.e., lower stability) in day to day relationship quality across two weeks. Although there is limited research on sacrifice motives and volatility in relationship quality, our results support a broader pattern demonstrating that pro-relationship strategies (e.g., approach motivations for sacrifices in this study; awareness of sacrifices, Akçabozan et al., 2017; and engaging in emotion work, Curran et al., 2015) seem to help promote stability in relationship quality.

The patterns of associations between partners' trait approach and avoidance motives and volatility in relationship quality were less consistent than the actor effects. Partners' higher trait *approach motives* predicted lower volatility in relationship quality (4 of 6 were significant; commitment and love were exceptions for H5b). These volatility patterns for H5b were more robust than the patterns for the fixed effects: trait approach motives (0 of 6 were significant; H1b) and for state approach motives (1 of 6 were significant; H3b). Partners' higher trait *avoidance motives* predicted higher volatility in relationship quality, except for passion and love (H6b). Compared to the fixed effects (H2b), the same number of significant associations (four) were found for trait partner avoidance motives and levels of relationship quality. Three of the

same relationship quality variables were found to be significantly associated with partners' avoidance motives for both levels and volatility: satisfaction, commitment, and trust. This may indicate that these relationship constructs are more susceptible to change in response to partners' avoidance motives than the other constructs, or given the associative nature of the analyses in this study, that lower levels and greater volatility in these constructs could lead partners to sacrifice more using avoidance motives. Without further cross-lagged (or temporal ordering) longitudinal study of these variables, it would be difficult to know which implication is more likely.

As we noted in the introduction section, examining whether sacrifice motives predict levels of relationship quality is important for understanding ways to promote higher relationship quality, but it does not explain whether these levels remain constant from day to day. Connecting this information to partner effects, it was interesting that the partner effects were more robust for *volatility* in relationship quality compared to *levels* of relationship quality.

It may be that mediating variables and temporality are also factors here. For example, if Pat (the actor) frequently makes sacrifices for Kris to avoid a fight (avoidance motivation), Kris (the partner) may not report lower overall levels of relationship quality because they are generally getting what they wanted given Pat's sacrifices. What may be more noticeable to Kris, however, is Pat's negative affect on days Pat makes sacrifices to avoid a fight. Although Kris's overall level of relationship quality might not change much, they may still have volatility in relationship quality from day-to-day. Although previous studies of volatility in relationship quality have primarily focused on actor effects, it is possible that the association between partners' avoidance sacrifice motives and individuals' volatility in relationship quality could be further explained by mediating variables, such as distress or destructive couple interactions

(Campbell et al., 2010). It is also possible that the duration of individuals' volatility in relationship quality would be a factor given that previous studies have found volatility over a longer period of time (i.e., every 4 months for 2 years) predicted lower life satisfaction (Whitton et al., 2014).

Although the literature shows that partner effects are less commonly found and tend to be lower in magnitude than actor effects (Eastwick et al., 2019), these previous studies have mostly focused on how levels of actor and partner predictors predict *levels* of relationship outcomes. Here, we found more partner effects in predicting *volatility* than we did in predicting levels of relationship quality. It may be that once actor (intrapersonal) effects are accounted for, there may be limited power to detect partner effects for levels of relationship quality; yet, partners' sacrifice motives may still be able to explain some of the volatility in individuals' relationship quality. Replication of these findings of levels and volatility of relationship quality remains an important area for future research. For now, we believe that the results of our volatility analysis emphasize the need to continue studying the effect that partners' sacrifices, and sacrifice motives, have on individuals' relationship quality.

Strengths, Limitations, and Future Directions

Our findings are meaningful for several reasons. First, we examined sacrifice motives and relationship quality as daily constructs, while moving our understanding beyond the focus on average levels and daily levels of relationship quality (Cooper et al., 2017) with our investigation of volatility in relationship quality. Second, we extended previous studies that examined associations between sacrifice frequency and volatility in relationship quality (Akçaboza et al., 2017; Totenhagen et al., 2016). Given that our study is the first study addressing the links

between sacrifice motives and volatility in relationship quality outcomes, more research is needed to determine whether the findings will be similar in different samples.

Second, we demonstrated that the separation of trait and state sacrifice motives and actor and partner effects was important in explaining levels of relationship quality. There were slightly more significant findings for trait (vs. state) motives and significantly more for actor (vs. partner) effects. Third, our study examined four additional relationship quality constructs beyond satisfaction and commitment, the latter of which previous studies have mostly focused on (Cooper et al., 2017; Muise et al., 2013). Our results indicating varying patterns of significance provided further evidence that partners might experience each relationship construct differently (Fletcher et al., 2000): The most frequent significant results were for satisfaction (11 of 12), followed by trust, intimacy, commitment, love, and finally passion (4 of 12). Finally, we note again that our measure of daily motives for sacrifice included data for both days in which individuals or partners reported a sacrifice and on days in which they did not report a sacrifice. As this measure is different from those used in previous research (e.g., Cooper et al., 2017; Impett et al., 2005), readers should be aware of this when comparing our results to other studies.

Despite these strengths, the current study has its limitations. We assessed patterns of variability or change in relationship quality as predicted by sacrifice motives but our results were still based on correlational associations and we could not address the potential causality or temporal ordering among these variables. Additionally, although we collected two weeks of diary data and were able to address questions about daily variability, we could not investigate how daily levels or volatility in sacrifice motives predict long-term changes in relationship quality. Thus, it may be possible that, contrary to our earlier interpretations, relationship quality drives individuals' and partners' sacrifice motives. Likewise, it is possible that individuals who

are more volatile in their relationship quality are those who are less approach and more avoidance motivated.

Further, the sample was adequate but not large and was mostly Caucasian, married, and cohabiting participants were recruited through convenience sampling, without representation of other forms of couple relationships (e.g., same-sex, racially or ethnically diverse couples). These factors limit the generalizability of our findings. Also, given the complexity of our models and the lack of clear theory suggesting gender differences, we did not examine whether men and women differed in associations between sacrifice motives and relationship quality, instead we controlled for gender. Still, future researchers might justify the exploration of possible gender differences and examine them more intently. In the future, research with larger, more representative samples would facilitate investigations of different types of relationships (e.g., married vs. cohabiting, same sex, cross-cultural relationships) or potential moderators and mediators that could better explain the associations between sacrifice motives and quality outcomes.

Finally, as indicated previously, the associations between approach and avoidance motives for sacrifices and romantic relationship quality outcomes can be explained by different processes (e.g., attachment styles, Impett & Gordon, 2010; Mattingly & Clark, 2012; Ruppel & Curran, 2012; self, partner, or relationship-focused motives; Righetti & Impett, 2017); however, this study does not attempt to test these processes. Existing research has shown that perceived partner-focused approach motives promote gratitude and that this association is partly mediated by perceived partner responsiveness, which signals how partners may come to feel grateful and perceive each other's pro-relational acts (Visserman et al., 2017). Therefore, investigating other underlying processes would be an interesting and important area for future research.

In conclusion, our results suggest that when it comes to helping couples preserve or improve their relationship quality, encouraging them to engage in sacrifices that are motivated by a desire to improve the relationship (rather than to avoid conflict or other negative outcomes) may be particularly beneficial for the individuals engaging in those sacrifices. Generally, when individuals reported greater approach motivations, they reported higher levels of relationship quality and lower volatility in relationship quality. Avoidance motivations in individuals did not appear particularly detrimental for *levels* of relationship quality, but they were associated with increased *volatility* in relationship quality for both themselves and their partners across several relationship quality constructs. We also note that most frequent significant results between sacrifice motives and relationship quality (for both levels and volatility as well as actor and partner effects) were for satisfaction, with the least significant results for passion; these patterns may be of use to note for practitioners working with couples. In sum, we conclude with the importance of studying dyads and testing the associations between sacrifice motives and daily relationship quality - both levels and volatility.

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Table 1
Descriptive Statistics for Study Variables

Variables	Females <i>M(SD)</i>	Males <i>M(SD)</i>
<i>Sacrifice motives</i>		
Approach motives	5.13(.76)	5.09(.95)
Avoidance motives	3.73(1.48)	4.09(1.53)
<i>Relationship Quality</i>		
Satisfaction	6.22(.85)	6.19(.83)
Commitment	6.56(.66)	6.52(.58)
Intimacy	6.07(.93)	6.05(.84)
Passion	5.21(1.52)	5.25(1.39)
Trust	6.23(.94)	6.28(.95)
Love	6.48(.74)	6.45(.62)

Note. Each scale on survey ranged from 1 to 7. $N = 220$ individuals.

Table 2
Correlations Among Study Variables

Measures	1	2	3	4	5	6	7	8	9	10
1. Actor Approach Motives	--									
2. Actor Avoidance Motives	.67***	--								
3. Partner Approach Motives	.42***	.42***	--							
4. Partner Avoidance Motives	.42***	.55***	.67***	--						
5. Satisfaction	.07**	-.13***	-.06	-.16***	--					
6. Commitment	.03	-.24***	-.09***	-.25***	.77***	--				
7. Intimacy	.19***	-.02	.10***	-.02	.85***	.64***	--			
8. Passion	.24***	.22***	.18***	.22***	.43***	.17***	.72***	--		
9. Trust	.08***	-.12***	-.07**	-.21***	.72***	.64***	.56***	.14***	--	
10. Love	.15***	-.09***	.004	-.14***	.77***	.78***	.76***	.43***	.51***	--

Note. All variables are calculated as the average daily means across 14 days. * $p < .05$, ** $p < .01$, *** $p < .001$. $N = 220$ individuals.

Table 3

Multilevel Models of Daily Relationship Quality Predicted by Daily Sacrifice Motives

	Daily Satisfaction		Daily Commitment		Daily Intimacy		Daily Passion		Daily Trust		Daily Love	
	<i>b</i>	(<i>SE</i>)	<i>b</i>	(<i>SE</i>)	<i>b</i>	(<i>SE</i>)	<i>b</i>	(<i>SE</i>)	<i>b</i>	(<i>SE</i>)	<i>b</i>	(<i>SE</i>)
<i>Fixed effects</i>												
Intercept	6.00***	0.09	6.44***	0.07	5.92***	0.09	5.16***	0.15	6.10***	0.10	6.35***	0.07
Day	0.008*	0.003	-0.004	0.002	0.004	0.003	0.003	0.004	0.003	0.003	0.002	0.002
Gender	0.02	0.09	-0.02	0.07	-0.003	0.09	0.03	0.14	0.08	0.10	-0.05	0.07
Ethnicity	-0.13	0.14	-0.12	0.10	-0.21	0.14	-0.31	0.23	-0.22	0.15	-0.09	0.11
Education level	0.21	0.13	0.15	0.10	0.16	0.13	0.16	0.22	0.17	0.14	0.10	0.10
Actual Sacrifice	0.10**	0.03	0.05*	0.02	0.08*	0.04	0.12*	0.05	0.01	0.03	0.09***	0.02
Relationship Length	-0.01	0.01	-0.001	0.005	-0.02**	0.01	-0.04**	0.01	0.01	0.01	-0.01	0.01
<i>Trait and state sacrifice motives as predictors of levels of relationship quality</i>												
<i>Trait effects (i.e., individuals' average levels; between-person differences)</i>												
H1a: Approach motives	0.31***	0.09	0.27***	0.06	0.30***	0.09	0.15	0.14	0.32***	0.09	0.29***	0.07
H2a: Avoidance motives	-0.18***	0.05	-0.17***	0.04	-0.13**	0.05	0.06	0.08	-0.15**	0.05	-0.12**	0.04
H1b: Approach motives (P)	0.11	0.09	0.10	0.06	0.09	0.09	-0.10	0.14	0.13	0.09	0.07	0.07
H2b: Avoidance motives (P)	-0.11*	0.05	-0.10**	0.04	-0.07	0.05	0.14	0.08	-0.18***	0.05	-0.09*	0.04
<i>State effects (individuals' daily levels or daily levels of sacrifice motives on a specific day; within-person differences)</i>												
H3a: Approach motives	0.16***	0.02	0.11***	0.01	0.16***	0.02	0.18***	0.02	0.12***	0.01	0.12***	0.01
H4a: Avoidance motives	-0.06***	0.01	-0.01	0.01	-0.04**	0.01	-0.01	0.02	-0.03**	0.01	-0.01	0.01
H3b: Approach motives (P)	0.04*	0.02	-0.001	0.01	0.03	0.02	0.04	0.02	0.02	0.01	-0.002	0.01
H4b: Avoidance motives (P)	-0.03*	0.01	-0.001	0.01	-0.003	0.01	-0.01	0.02	-0.01	0.01	0.000	0.01
<i>Volatility effects</i>												
<i>Trait motivation of sacrifices as predictors of residual error variance (i.e., within-person variability across 14 days)</i>												
Gender	0.03	0.08	0.36***	0.07	-0.16*	0.07	-0.11	0.07	-0.29***	0.07	0.14	0.08
H5a: Approach motives	-0.34***	0.05	-0.72***	0.05	-0.42***	0.06	-0.53***	0.06	-0.36***	0.05	-0.73***	0.05
H6a: Avoidance motives	0.31***	0.04	0.40***	0.03	0.15***	0.04	0.27***	0.04	0.42***	0.04	0.48***	0.04
H5b: Approach motives (P)	-0.39***	0.06	-0.10	0.06	-0.27***	0.06	-0.13*	0.06	-0.25***	0.06	0.001	0.06
H6b: Avoidance motives (P)	0.23***	0.04	0.21***	0.03	0.13***	0.04	-0.07	0.04	0.16***	0.04	0.04	0.04

Notes. Actor effects indicate individuals' effects on their own outcomes and partner effects indicate individuals' effects on their partners' outcomes. *** $p < .001$, ** $p < .01$, * $p < .05$. For each DV, $N = 110$ couples, 220 individuals. Estimates of the effects of predictors of variability must be exponentiated before being added to the residual variance to get the estimate of the residual variance at a certain level of the predictor. We put in **bold font** the *bs* that were significant from the fixed effects and the volatility analyses specific to hypotheses. P = Partner effects.