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Partners' Felt-Loved as a Strong Link: Partners Who Feel Loved May Buffer

Destructive Behavior by Actors Who Feel Unloved

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Abstract

Feeling loved (loved, cared for, accepted, valued, and understood) is inherently dyadic, yet most prior theoretical perspectives and investigations have focused on how actors feeling (un)loved shapes actors' outcomes. Adopting a dyadic perspective, the present research tested whether the established links between actors feeling unloved and destructive behavior depended on partners' feelings of being loved. Does feeling loved need to be mutual to reduce destructive behavior, or can partners feeling loved compensate for actors feeling unloved? In five dyadic observational studies, couples were recorded discussing conflicts, diverging preferences or relationship strengths, or interacting with their child (total $N = 842$ couples; 1,965 observed interactions). Participants reported how much they felt loved during each interaction and independent coders rated how much each person exhibited destructive behavior. Significant actors' × partners' felt-loved interactions revealed a *Strong-Link/Mutual Felt-Unloved* pattern: partners' high felt-loved buffered the damaging effect of actors' low felt-loved on destructive behavior, resulting in actors' destructive behavior mostly occurring when both actors' and partners' felt-loved was low. This dyadic pattern also emerged in three supplemental daily sampling studies. Providing directional support for the *Strong-Link/Mutual Felt-Unloved* pattern, in Studies 4 and 5 involving two or more sequential interactions, actors' × partners' felt-loved in one interaction predicted actors' destructive behavior within couples' subsequent conflict interactions. The results illustrate the dyadic nature of feeling loved: partners feeling loved can protect against actors feeling unloved in challenging interactions. Assessing actor × partner effects should be equally valuable for advancing understanding of other fundamentally dyadic relationship processes.

Keywords: love, destructive behavior, behavioral observation, dyadic, strong link, buffering

Feeling loved is a fundamental human need (Baumeister & Leary, 1995; Ryan & Deci, 2000). Yet, despite the attention of philosophers, poets, writers, social scientists, and laypeople, there does not exist a consensually agreed upon definition or measurement of feeling loved. We integrated scholarly and lay conceptualizations of love with key relationship theories to identify the core components of feeling loved—feeling loved, cared for, accepted, valued, and understood (e.g., Hatfield and Walster, 1978; Clark et al., 2019; Fehr, 1988; Hendrick & Hendrick, 1986; Lee, 1977; Murray et al., 2006; Reis, 2007; Rubin, 1970; Sprecher and Fehr, 2005; Sternberg, 1986). Such feelings of being loved are essential to set aside self-protective concerns to repair threatening interactions, whereas feeling unloved motivates self-protection against the risk of rejection, including destructive behavior toward partners (Mikulincer & Shaver, 2007; Murray et al., 2006; Reis, 2007, 2012; Simpson & Rholes, 2017). Yet, the very nature of feeling (un)loved involves another person, and thus understanding the consequences of feeling (un)loved likely requires a dyadic perspective. For example, do both Alex and Pat need to feel loved to prevent destructive behavior in challenging interactions? Or, can Pat feeling loved protect against Alex feeling unloved by mitigating Alex's destructive behavior? The present research addresses these important questions by considering how both actors' and partners' feelings of being loved combine to shape destructive behavior in relationship interactions.

We consider two competing dyadic patterns of feeling (un)loved. First, prominent theoretical models imply that relationships will thrive when actors and partners mutually feel loved (Clark et al., 2019; Murray & Holmes, 2009; Reis & Clark, 2014), but no prior research has tested whether *both* actors *and* partners need to feel loved for the positive effects of feeling loved to emerge. Moreover, the importance of both actors and partners feeling loved may mean that partners feeling unloved acts as a *weak link* in relationship interactions by promoting actors' destructive behavior even when actors feel loved. Second, however,

consistent with other theoretical models emphasizing that partners' strengths can compensate for actors' vulnerabilities (e.g., Arriaga et al., 2018; Overall & Simpson, 2015; Simpson & Overall, 2014), partners feeling loved may act as a *strong link* by mitigating the destructive responses that typically arise from actors feeling unloved. Thus, testing dyadic patterns of feeling loved has the potential to advance understanding of the behavioral consequences of feeling (un)loved as well as differentiate between key theories in relationship science. In the following sections, we integrate a range of theoretical and empirical work to outline our conceptualization of feeling loved and why these two competing dyadic patterns may explain how feeling (un)loved shapes destructive behavior in relationship interactions.

Central Components of Feeling Loved

To identify the central components of feeling loved within relationship interactions, we integrated scholarly and lay conceptualizations of love with prominent relationship theories that identify a principal set of feelings as key determinants of relationship behavior. Indeed, despite that feeling loved is at the very heart of close relationships, there is no clear consensually agreed upon definition of love and thus *feeling loved*. We first focus on the key feelings characterized in scholarly and lay conceptualizations of love, which offer varying descriptions of the attitudes, thoughts, feelings, motives, and behaviors that characterize different kinds of loving relationships (e.g., Hatfield and Walster, 1978; Fehr, 1988; Hendrick & Hendrick, 1986; Lee, 1977; Rubin, 1970; Sprecher and Fehr, 2005; Sternberg, 1986). Moreover, the measures that emerge from these models and prototypes of love do not directly incorporate or assess feeling 'love' or being 'loved', but rather capture an array of sentiments and motivations that are essential to love. As we describe next, these core components include caring, accepting, valuing, and understanding.

A core component of the first love scale by Rubin (1970) included caring for the partner, and people perceive this caring component to be the most powerful indicator of love

(Steck et al., 1982). Early models identifying types of love also identified caring as central to companionate love (Hatfield and Walster, 1978) and storge love (Hendrick & Hendrick, 1986; Lee, 1977) that characterize close, committed relationships. The intimacy component of Sternberg's (1986, 1997) measurement of love, which focuses on feelings within loving relationships, also emphasized caring ("I am actively supportive of my partner's well-being"), as well as valuing ("I value my partner greatly in life") and understanding ("I feel that I really understand my partner"). Sprecher and Fehr (2005) also converged on these components in defining and measuring compassionate love, including feeling "selfless caring", "accepting partners even when they do … wrong", and wanting to support and help as well as "try to understand rather than judge". Finally, the most central features identified by people when asked to define love involve "caring", "concern for other's wellbeing", "accept other the way s/he is", "respect", and "understanding", which underpin other components identified to be central to loving relationships, such as "trust" and "commitment" (Fehr, 1988; Fehr & Russell, 1991). Moreover, the most prototypical features of love, including caring, helping, respect, accepting, and understanding aligned with the earlier identification of various subtypes of love (as described above; Fehr & Russell, 1991).

Consistent with scientific and lay conceptualizations of love, prominent theories that account for *feeling loved* in relationships also emphasize these core components: feeling loved, cared for, accepted, valued, and understood (see Table 1). Attachment theory identifies felt security as the principal feeling that governs close relationship interactions (Mikulincer & Shaver, 2007). As shown in Table 1, in adult relationships, felt security is defined and measured as feeling loved, cared for, supported, and valued (e.g., Carnelley & Rowe, 2010; Gillath et al., 2009; Luke et al., 2012; also see Gillath et al., 2022), which are frequently incorporated into measures of felt security within relationship interactions (e.g., Jakubiak & Feeney, 2016; Lemay & Dudley, 2011; Tran & Simpson, 2009). Models inspired by

Table 1. Principal Theories and Example Measures of Core Components of Feeling Loved in Close Relationships

Theory	Construct and Definition	Typical Measures and Exemplar Items
Attachment Theory	*Felt Security* Feel loved, cared for, comforted, and safe	*Felt Security* (Luke et al., 2012) I felt … "loved"; "cared for"; "comforted", "supported"; "safe"; "protected"; "valued"; *State Security* (Gillath et al., 2009) "I feel loved"; "I feel like others care about me"; "I feel like I have someone to rely on"
Risk Regulation Model	*Perceived Regard* Feel loved, accepted, and valued by partner	*Partner's Unconditional Regard* (Murray et al., 1998, 2002, 2005) "My partner loves and accepts me unconditionally"; "My partner is very tolerant and accepting of my faults"; "I am confident my partner will always want to look beyond my faults and see the best in me" *Felt Acceptance* (Murray et al., 2003ab) "My partner loves me"; "My partner accepts me as I am"; "My partner sees the best in me" *Perceptions of Partner's Regard* (Gaucher et al., 2012) "My partner cares for me"; "My partner is accepting of me; "My partner thinks that I am a valuable person"; *Perceived Regard* (Cameron & Overall, 2018; Thomson et al., 2018; Overall & Sibley, 2009ab) "My partner accepted and loved me"; "My partner valued and respected me"; "I did not feel accepted/valued by my partner …. I felt very accepted/valued by my partner"
Perceived Partner Responsiveness Framework	*Perceived Partner Responsiveness* Perception that partner cares for, values, and understands "central, core defining features of the self"	*Perceived Partner Responsiveness Scale* (Reis et al., 2017) My partner usually… "is responsive to my needs"; "values and respects the whole package that is the 'real' me"; "expresses liking and encouragement for me; "understands me" *Perceived Responsiveness and Insensitivity Scale* (Crasta et al., 2021) My partner… "is responsive to my needs"; "takes my concerns seriously"; "is understanding" *Daily Perceived Partner Responsiveness* (Gable et al., 2012) "My partner made me feel cared for"; "My partner made me feel like he/she valued my abilities and opinions"; "My partner understood me"

interdependence theory (Kelley, 1979) incorporate overlapping constructs. The risk regulation model (Murray et al., 2006) identifies perceptions of partners' positive regard as the essential feeling that determines responses in relationship interactions, which is defined and measured as feeling loved, accepted, and valued by partners (e.g., Murray et al., 1998, 2002, 2003ab; see Table 1). Reis (2007, 2012) emphasized shared components across these (and other) theories to postulate that feelings of being cared for, valued, and understood are critical in determining responses in relationship interactions because they signal whether partners have been or will be responsive (and thus labelled these feelings "perceived partner responsiveness"). Finally, consistent with our analysis that models, theories and measures of love include feeling cared for, accepted, valued and understood, Clark and colleagues (2019) recently defined love as partners striving to care for, accept, and understand each other.

In sum, the central feelings identified by key relationship theories share core components that align with conceptualizations of love——feeling loved, cared for, accepted, valued, and understood. These shared components identified in Table 1 provided the foundation for our operationalization of feeling loved versus unloved in relationship interactions (see Table 2). Next, we integrate and apply these theories and associated research to outline how feeling (un)loved shapes destructive behavior within relationship interactions.

Feeling Loved and Destructive Behavior within Relationship Interactions

The theories in Table 1 all emphasize that feeling loved—assessed as feeling loved, cared for, accepted, valued, understood—determines the way people respond to challenging relationship interactions (see Table 1). Attachment theory emphasizes that feeling unloved and insecure activates a range of defensive and destructive behaviors designed to protect against expected hurt and rejection, whereas feeling loved allows people to respond to relationship challenges with pro-relationship goals because they trust that their partners will be responsive (Simpson & Rholes, 2017). The risk regulation model also stipulates that

people who feel poorly regarded and unloved behave in destructive ways to protect against the risk of hurt and rejection, whereas people who feel loved can set aside self-protective concerns to seek closeness and repair threatening interactions (Murray et al., 2002, 2003a). Similarly, the perceived partner responsiveness framework highlights that individuals who feel unloved (uncared for, undervalued, misunderstood) will be more guarded and less willing to reveal vulnerabilities during stressful interactions than those who feel loved and trust their partners to be responsive (Reis & Clark, 2013; Ruan et al., 2020; Von Culin et al., 2018).

A range of research inspired by these different theories has also provided strong evidence for the converging principle that feeling unloved generates self-protective, destructive behavior during challenging relationship interactions. Many of these studies have focused on individual differences that are characterized by chronic feelings of being unloved, including high attachment anxiety (Rholes et al., 1999; Simpson et al., 1996), high rejection sensitivity (Ayduk et al., 1999; Overall & Sibley, 2009b), chronic perceptions of partner's low regard (Murray et al., 2003a), and low self-esteem (Murray et al., 1998, 2002). These studies have repeatedly shown that people who chronically feel unloved are more likely to act in destructive ways, including derogating their partners, displaying greater anger and hostility, or treating their partners in cold, critical and hurtful ways.

Critically, attachment and risk regulation theory emphasize that these individual differences prompt self-protective, destructive behavior because they leave people susceptible to feeling unloved within interactions with partners, and it is these in-the-moment feelings of being unloved that activate destructive responses (Murray et al., 2006; Simpson & Rholes, 2017). Thus, independent or irrespective of chronic feelings or individual differences, feeling more unloved within social interactions is associated with behaving in more hurtful and critical ways toward partners (Overall & Sibley, 2009ab). Indeed, a range of research inspired by the different theories in Table 1 provides supporting evidence that feeling loved within

relationship interactions (as assessed by the shared components in Table 1) is a central determinant of immediate behavioral and relational outcomes during daily interactions (e.g., Jolink et al., 2021; Ruan et al., 2020; Sasaki & Overall, 2021) and when facing conflicts (e.g., Thomson et al., 2018), encountering stressful events (e.g., Ruan et al., 2020), receiving support (e.g., Maisel & Gable, 2009), and sharing personal information or accomplishments (e.g., Gable et al., 2006; Laurenceau et al., 1998). Thus, compared to chronic feelings, feelings of being unloved within specific relationship interactions should be the stronger, more proximal indicator of whether individuals act in self-protective, destructive ways.

A Dyadic Perspective on Feeling Unloved and Destructive Behavior

The intrinsically interdependent nature of close relationships (Kelley & Thibaut, 1978) means that, in addition to individuals (*actors*) feeling unloved, their *partners* feeling unloved also may generate relationship dynamics that heighten the risk of hurt and rejection and prompt *actors* to behave in destructive ways (Murray et al., 2006). For example, Alex may snap at Pat not only when Alex feels unloved (*actor effect*), but also when Pat feeling unloved creates defensiveness and conveys distance or rejection (*partner effect*). Indeed, *partners* who are feeling unloved tend to behave in ways that lead *actors* to perceive partners as selfish, unappreciative, hurtful, and rejecting (Murray et al., 2003a), which may amplify *actors'* destructive behavior. The dyadic nature and consequences of feeling unloved may also mean that actors' and partners' felt-loved combine to influence actors' destructive behavior. For example, can Pat feeling unloved override the sense of safety arising from Alex feeling loved and prompt Alex to respond destructively, such that both Alex and Pat need to feel loved to prevent destructive behavior? Or, can Pat feeling loved protect against Alex feeling unloved by mitigating Alex's destructive behavior, such that destructive behavior will only occur when both Alex and Pat feel unloved? We next consider the theoretical and empirical case for these two potential dyadic patterns of feeling (un)loved.

Weak-Link/Mutual Felt-Loved Dyadic Model (Figure 1, Panel A)

Applications of interdependence theory have generated evidence for a specific dyadic pattern that is relevant to the risks associated with feeling unloved. So-called w*eak-link* patterns occur when one dyad member's vulnerability is enough to undermine relationship satisfaction and stability (Kelley & Thibaut, 1978; Waller & Hill, 1951). For example, it only takes one person's lack of commitment to increase the risk of relationship dysfunction or dissolution because both actors and partners need to be committed to sustain relationships (Attridge et al., 1995; Oriña et al., 2011). Likewise, partners' suppression of emotion expressions acts as a weak link by undermining conflict resolution and relationship satisfaction even when actors' expressive suppression is low (Sasaki et al., 2021). Partners' low gratitude can similarly act as a weak link, indicating that both actors and partners need to feel grateful to be highly satisfied (McNulty & Dugas, 2019).

Although weak-link patterns have not been applied to feeling (un)loved or to understand behaviors within relationship interactions, the theoretical and empirical work described above suggests that partners feeling unloved may act as a weak link to produce greater destructive behavior even when actors are feeling loved. For example, even if Alex feels loved, Pat feeling unloved may prompt Pat to act in more destructive ways and dismiss or undermine Alex's well-intentioned efforts to connect (e.g., Lemay & Clark, 2008b; Murray et al., 2003a), which may lead to Alex behaving destructively in return (Kohn et al., 2012; Murray et al., 2003a). Thus, partners feeling unloved may generate a risky relationship climate, such as by partners enacting greater destructive behavior, thereby overriding the sense of safety and activating self-protective, destructive behavior in actors feeling loved.

The implication of partners feeling unloved acting as a weak link is that both actors *and* partners need to feel loved to limit destructive behavior within relationship interactions. If Pat feeling unloved promotes Alex's destructive behavior even when Alex feels loved, then

both Alex and Pat need to feel loved to prevent destructive behavior. The potential presence and importance of such a *mutual felt-loved* pattern is consistent within key theoretical models that emphasize the benefits of mutual love and responsiveness for healthy relationship functioning. The mutual communal responsiveness model proposes that a defining characteristic of satisfying relationships is mutual feelings of being loved, which stems from actors and partners being loving to, and expecting and seeking love, from each other (Clark et al., 2019). Mutual feelings of being loved likely create a relationship climate in which both actors and partners do not worry about protecting the self and instead feel safe depending on each other (Clark et al., 2019; Reis & Clark, 2014), eliminating destructive behavior even within challenging interactions. The perceived partner responsiveness framework (Reis et al., 2004) also suggests that actors and partners mutually build love through feeling and enacting love toward each other (Canevello & Crocker, 2010; Wieselquist et al., 1999), fostering trust and commitment (Wieselquist et al., 1999) that likely inhibits self-protective, destructive tendencies. Likewise, the Motivation-Management Theory of Mutual Responsiveness (Murray & Holmes, 2009) proposes that successful relationships are characterized by both actors and partners similarly feeling loved, which is necessary for both to be equally willing to set aside self-protective concerns and seek connection (also see Cavallo et al., 2013).

These theoretical frameworks imply that mutual feelings of being loved will provide the most beneficial outcomes, such as low levels of destructive behavior, but do not consider whether the benefits of mutual felt-loved could result in any one partner feeling unloved creating more negative outcomes for the other (i.e., act as a weak-link). Moreover, research generated from these frameworks has not directly tested how both actors' and partners' feelings of being loved combine, and thus there is little empirical support as to whether better outcomes emerge from the combination of *both* actors and partners feeling loved. An exception is research guided by Fredickson's (2016) model of positivity resonance, involving

couples that show mutual care and concern, shared positive affect, and behavioral synchrony. Consistent with the mutual felt-loved pattern, couples coded higher in positivity resonance reported greater marital satisfaction (Otero et al., 2020). Assessing couple-level positivity resonance, however, does not provide information about the independent contribution of each dyad member's felt-loved and so cannot test whether one dyad member feeling unloved could be a weak link and undermine relationships even when the other person feels loved.

In the present research, we directly test the dyadic nature and consequences of feeling (un)loved by modeling the interaction between actors' and partners' felt-loved during relationship interactions to predict actors' destructive behavior. Figure 1 (Panel A) depicts the *Weak-Link/Mutual Felt-Loved* pattern. First, as shown on the left side of Panel A, actors low in felt-loved will show similarly high levels of destructive behavior regardless of whether partners' felt-loved is relatively low (solid line) or high (dashed line). Second, as shown on the right side of Panel A, actors high in felt-loved also will show greater destructive behavior when partners' felt-loved is low and acts as a weak link (solid line). Accordingly, actors' destructive behavior is lowest when both actors' and partners' felt-loved are high (see dashed line in bottom right side of Panel A).

Strong-Link/Mutual Felt-Unloved Dyadic Model (Figure 1, Panel B)

Separate lines of research have provided evidence for an alternative *strong-link* dyadic pattern. Strong-link patterns occur when one dyad member can compensate for the other's vulnerabilities and mitigate destructive processes (Arriaga et al., 2018; Overall & Simpson, 2015; Simpson & Overall, 2014). Applying the strong-link pattern to feeling (un)loved during relationship interactions, partners feeling loved may act as a strong link and buffer the harmful effects of actors feeling unloved on destructive behavior. For example, even if Alex feels unloved, Pat feeling loved may generate a safe and cooperative relationship climate that restores Alex's feelings of safety and abates Alex's self-protective concerns.

Thus, rather than Pat feeling unloved acting as a weak link to promote Alex's destructive

behavior even when Alex feels loved, Pat feeling loved may act as a strong link by alleviating

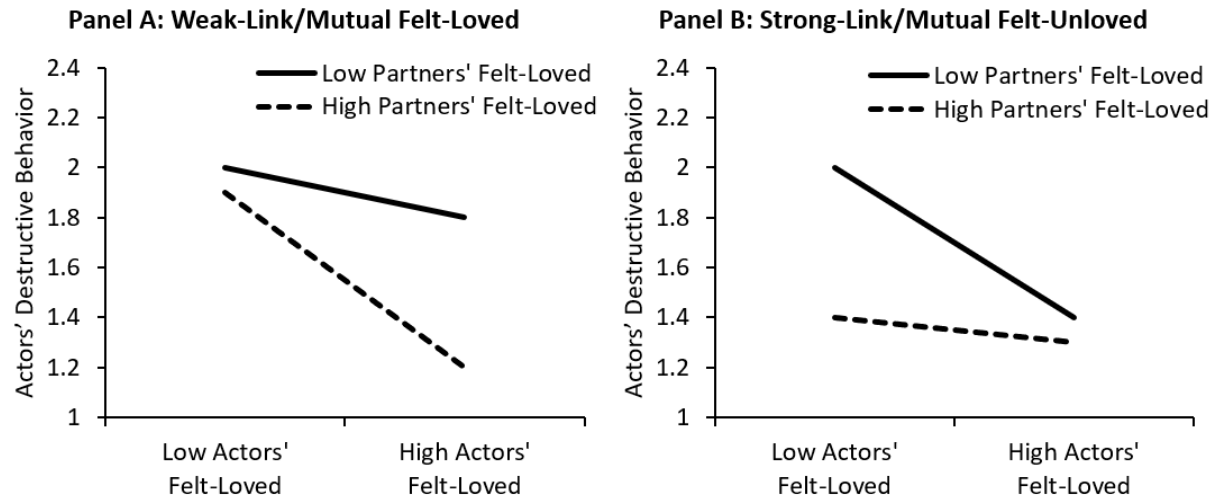Alex's destructive behavior that may arise from Alex feeling unloved.

Figure 1. Hypothesized Dyadic Patterns: Weak-Link/Mutual Felt-Loved (Panel A)

and Strong-Link/Mutual Felt-Unloved (Panel B).

Note. Both possible dyadic patterns would yield significant actor × partner felt-loved interactions, but the patterns differ in the combination of simple effects. For a *Weak-Link/Mutual Felt-Loved* pattern (Panel A), actors' higher felt-loved will predict lower destructive behavior when partners' felt-loved also is high (dashed line), but not (or less so) when partners' felt-loved is low and acts as a weak link (solid line). For a *Strong-Link/Mutual Felt-Unloved* pattern (Panel B), actors' lower felt-loved will predict greater destructive behavior when partners' felt-loved also is low (solid line), but not (or less so) when partners' felt-loved is high and acts as a strong link (dashed line).

One reason a strong-link pattern may occur is because feeling loved could allow Pat

to be responsive to the needs, concerns, vulnerabilities, and even destructive behavior arising

from Alex feeling unloved. For example, partners who feel more loved are more likely to

enact loving behavior (Canevello & Crocker, 2010; Reis et al., 2004). Moreover, partners'

loving behavior, such as expressions of affection and inhibition of negative behavior (Lemay

& Dudley, 2011), physical touch (Jakubiak & Feeney, 2016; Kim et al., 2018), comfort and

reassurance (Arriaga et al., 2020), or accommodation (Tran & Simpson, 2009), can help

insecure actors who tend to feel unloved overcome self-protective, destructive responses

during relationship interactions. Similarly, partner accommodation when actors behave

destructively can prevent reciprocal destructive behavior escalating across challenging interactions (e.g., Notarius et al., 1989; Rusbult et al., 1991). These prior studies, however, have tended to focus on individual difference vulnerabilities rather than felt-loved within relationship interactions, and have not considered or tested whether partner buffering effects emerge from partners' *feelings* of being loved. In the present research, we test whether partners' *feelings* of being loved can buffer the harmful effects of actors *feeling* unloved on destructive behavior, and we consider whether one reason such a strong-link pattern may arise is because partners who maintain high felt-loved enact greater loving behavior.

The implication of a strong link pattern is that destructive behavior will only occur, or be most likely to occur, when *both* actors *and* partners feel unloved. Although Alex feeling unloved might typically result in Alex behaving destructively, if Pat feeling loved creates dynamics that limits or overcomes Alex's destructive behavior, then Alex feeling unloved will only create destructive behavior when Pat also feels unloved. Figure 1, Panel B, depicts this *Strong-Link/Mutual Felt-Unloved* pattern. First, as evident in the left side of Panel B, actors who feel less loved will show greater destructive behavior when partners' felt-loved is low (solid line), but not (or less so) when partners' felt-loved is high and acts as a strong link (dashed line). Accordingly, actors' destructive behavior is highest when both actors' and partners' felt-loved are low (see top left of Panel B).

Present Research: Testing Dyadic Patterns of Feeling Unloved

In eight studies, we examine how actors' and partners' felt-loved combine to determine destructive behavior in relationship interactions. Table 2 describes the aims and measures of each study. Across studies, our measures of feeling loved (loved, cared for, accepted, valued, and understood) include core components shared across felt security, perceived regard, and perceived partner responsiveness (see Table 1). We focused on in-the-moment feelings of being (un)loved because these feelings are the most proximal indicator of

Table 2. Aims and Measurement of Feeling Loved and Destructive and Loving Behaviors across Studies

Study	Aim	Measure of Feeling Loved	Measure of Destructive Behavior	Measure of Loving Behavior
Supplemental Studies 1 & 2	Preliminary examination of dyadic patterns within daily relationship interactions	Daily ratings of whether their partner was affectionate and loving, accepted, valued and respected them	Daily ratings of hurtful, critical or unpleasant behavior toward partner	
Study 1	Test of dyadic pattern within couples' conflict discussions	Post-discussion ratings of felt cared for/loved, accepted/valued, and understood/validated	Observer-rated hurtful, critical or unpleasant behavior	Observer ratings of being warm/affectionate, compassionate, and empathetic toward partner
Supplemental Study 3	Replication test of dyadic pattern within daily relationship interactions	Daily ratings of felt loved, cared for, liked and admired	Daily ratings of being mean, moody/critical, and inattentive/insensitive toward partner	
Study 2	Replication test of dyadic pattern within couples' discussions involving diverging preferences	Post-discussion ratings of whether their partner cared for, appreciated, and understood them	Observer-rated verbal and nonverbal hostility, withdrawal, and dysphoric affect	Observer-rated verbal and nonverbal openness and humor/positive affect
Study 3	Replication test of dyadic pattern within couples' conflict discussions and family interactions involving couples and their child	Post-discussion ratings of felt cared for/loved, accepted/valued, and understood/validated	*Couples' Conflict Discussions* Observer-rated criticism, anger, and hostility *Family Activity* Observer-rated criticism, blame, and hostility	*Couples' Conflict Discussions* Observer-rated caring, understanding, and validation *Family Activity* Observer-rated affection, warmth, and positive regard
Study 4	Replication test of dyadic pattern within two sequential couples' conflict discussions	Post-discussion ratings of felt cared for, accepted, valued, and understood	Observer-rated criticism, anger, and hostility	Observer-rated attempts to soften conflict, expressions of affection and positive affect, and inhibition of negative reactions
Study 5	Replication test of dyadic pattern within four sequential interactions, including couples' conflict and relationship strength discussions and family interactions involving couples and their child	Post-discussion ratings of felt cared for/loved and understood/validated	*Couples' Discussions* Observer-rated criticism, anger, and hostility *Family Activity* Observer-rated criticism, blame, and hostility	*Couples' Discussions* Observer-rated attempts to soften conflict, expressions of affection and positive affect, and inhibition of negative reactions *Family Activity* Observer-rated affection, warmth, and positive regard

whether individuals behave in self-protective, destructive ways within relationship interactions. We focused on destructive behavior because the theory and accompanying research described above provide strong evidence that feeling unloved generates destructive responses especially during challenging interactions.[1] We focused on examining processes occurring within couples' interactions because it is within interactions—particularly those that risk hurt and rejection—where feeling unloved and destructive behavior are likely to emerge, and in turn can have harmful consequences for relationships (Kanter et al., 2022). For all of these reasons, the five primary studies we present assess felt-loved and destructive behavior within couples' specific observed interactions supplemented by three daily experience sampling studies (see Table 2).[2]

Our primary analyses across all studies tested whether actors' and partners' felt-loved combined to predict destructive behavior by modelling the main and interaction effects of actors' and partners' felt-loved on actors' destructive behavior (see Figure 1). Based on the above integration of theory and research across areas of relationship science, we examined whether the expected significant actor × partner felt-loved interaction was characterized by two possible dyadic patterns. A *Weak-Link/Mutual Felt-Loved* dyadic pattern may emerge: partners' low felt-loved may signal a heightened risk of hurt and rejection and promote actors' destructive behavior even when actors' felt-loved is high (*weak link*), resulting in both actors and partners needing to experience high felt-loved to circumvent actors' destructive behavior (*mutual felt-loved*; see Figure 1, Panel A). Alternatively, a *Strong-Link/Mutual Felt-*

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[1] Our rationale for focusing on destructive behavior as the outcome is guided by attachment, risk regulation, and perceived partner responsiveness theories emphasizing that feeling unloved generates self-protective, destructive responses. Nevertheless, it is possible that actors' and partners' feelings of being (un)loved also extend to shape actors' *loving behavior*. Guided by reviewer queries, we present tests of actors' × partners' felt-loved on actors' loving behavior in the Online Supplemental Materials (OSM). The dyadic patterns shown for actors' destructive behavior were not evident for actors' loving behavior. We consider the distinctions between destructive and loving behavior in the general discussion.

[2] We presented the daily sampling studies in the OSM because they assess feelings and responses occurring across a range of separate interactions each day and thus provide a less optimal test of the critical processes associated with feeling loved within a specific interaction. Nonetheless, the daily sampling studies replicated the dyadic pattern of felt-loved in our primary studies.

Unloved pattern may emerge: partners' high felt-loved may provide a safe and secure relationship climate that attenuates the link between actors' lower felt-loved and destructive behavior (*strong link*), resulting in actors' destructive behavior mostly occurring when both actors' and partners' felt-loved is low (*mutual felt-unloved;* see Figure 1, Panel B).

Depending on the type of dyadic pattern that emerged, we conducted secondary analyses to examine whether partners' behavior explained why partners feeling (un)loved moderated the links between actors' felt-loved and destructive behavior (i.e., mediated moderation). As shown in Figure 2, guided by the theory and research reviewed above, we theorized that partners feeling unloved or loved may act as a weak link or a strong link via partners enacting greater destructive or loving behavior. For a *Weak-Link/Mutual Felt-Loved* pattern, partners' low felt-loved may generate risky dynamics because partners behave more destructively, which acts as a weak link by disrupting the sense of safety associated with actors' high felt-loved and thus reducing the positive effect of actors' higher felt-loved on lower destructive behavior. For a *Strong-Link/Mutual Felt-Unloved* pattern, partners' high felt-loved may mean partners enact greater loving behavior, which acts as a strong-link by buffering the negative effect of actors' lower felt-loved on greater destructive behavior.

We also conducted two sets of additional analyses. First, across all studies, we ran analyses to illustrate, as expected, that the effects of actors' and partners' felt-loved within couples' interactions were independent of individual difference vulnerabilities in feeling unloved as indexed by high attachment anxiety or low self-esteem (Fraley & Shaver, 2000; Mikulincer & Shaver, 2007; Murray et al., 2000, 2003b). Second, although our primary aim and analyses focused on the dyadic patterns of feeling loved on actors' destructive behavior within relationship interactions, the correlational nature of these data prevents conclusions about the direction of effects. To provide additional evidence of the direction of effects, in three studies that involved two or more sequential interactions (Studies 3-5), we ran

additional analyses testing whether the effects of actors' × partners' felt-loved in one

interaction carried over to predict actors' destructive behavior in the subsequent interaction.
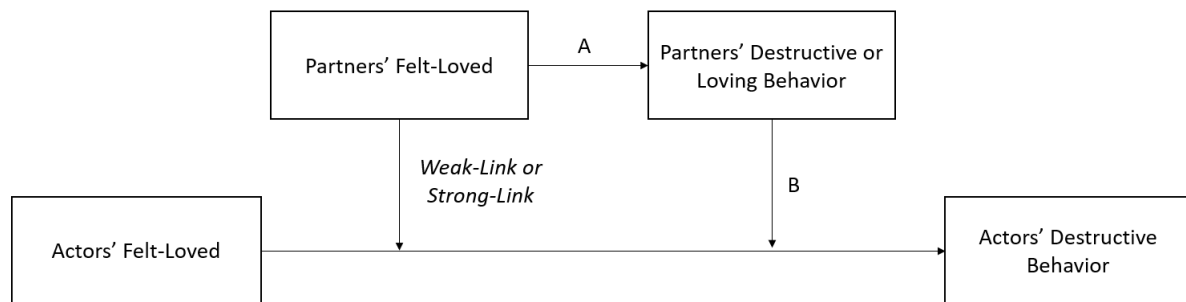
Figure 2. Mediated Moderation Model depicting Partners' Destructive or Loving Behavior as a Mechanism through which Partners' Felt-Loved Moderated the Links between Actors' Felt-Loved and Destructive Behavior.

Note. Partners' felt-loved could moderate the links between actors' felt-loved and destructive behavior by acting as a *weak link* or a *strong link* as shown in Figure 1. For a *weak-link* pattern, partners low in felt-loved may enact greater destructive behavior that reduces the positive effect of actors' higher felt-loved on lower destructive behavior. For a *strong-link* pattern, partners high in felt-loved may enact greater loving behavior that buffers the negative effect of actors' lower felt-loved on greater destructive behavior.

We report all studies we have analyzed or conducted for the present research. The

order in which we present the studies is the order in which we analyzed the data, applied and

received funding for replication studies, and then conducted final replication tests after initial

submission and review of this work. The studies and analyses were not pre-registered. We

describe the aim, timing and development of each study below starting with preliminary

examinations and ending with a series of replication tests. The materials, data, and syntax to

replicate analyses for all studies are available on the Open Science Framework

(https://osf.io/m4jnd/?view_only=d916b0f8f5d8462e93ff24f297263158).

Supplemental Studies 1 and 2 provided a preliminary test of the dyadic patterns of

feeling loved by analyzing two daily experience sampling studies, in which participants

reported how much they felt loved and behaved destructively toward their partner every day

for 21 days (see Table 2). After establishing initial evidence, we tested whether the dyadic

pattern emerged during lab-based conflict discussions (Study 1). Couples reported how much

they felt loved during the conflict discussion, and independent coders rated how much each person exhibited destructive and loving behavior toward their partner (see Table 2).

On the basis of these preliminary studies, the first author applied for funding to conduct replication tests using two existing samples collected in different countries by different research teams that were available on The Love Consortium database (www.theloveconsortium.org). Thus, these replication tests were outlined prior to receiving data for analyses. In Supplemental Study 3, participants reported how much they felt loved and whether or not they behaved destructively toward their partner each day for 14 days (see Table 2). In Study 2, participants reported how much they felt loved during a discussion involving couples' diverging preferences, and independent coders rated how much each person exhibited destructive and positive behavior (see Table 2).

Study 3 aimed to replicate and extend the dyadic patterns that were supported across the prior studies within (a) couples' conflict discussions and (b) family interactions involving couples' working together with their 4-5 year old child. Studies 4 and 5 were analyzed and conducted after initial review of the dyadic pattern that replicated across the prior studies. Study 4 involved two sequential couples' conflict discussions, and Study 5 involved four sequential interactions, including couples' conflict and relationship strength discussions and family interactions involving couples and their child. In each study, participants reported how much they felt loved by their partner, and independent coders rated how much each person exhibited destructive and loving behavior, during each interaction (see Table 2).

Supplemental Studies 1 and 2

We first used archival data to provide a preliminary test of the possible dyadic patterns of felt-loved shown in Figure 1. In two independent studies collected at different universities, both couple members rated how much they felt loved by their partner as well as their level of destructive behavior each day for 21 days (see Table 2 and OSM for more

details). As described in the OSM, daily variations in actors' × partners' feelings of being loved predicted actors' destructive behavior during couples' daily interactions. In both supplemental studies, the results provided evidence for a *Strong-Link/Mutual Felt-Unloved* pattern as depicted in Figure 1, Panel B. Actors' lower felt-loved predicted greater daily destructive behavior, but partners' high felt-loved buffered this damaging effect (*strong link*). Thus, higher levels of actors' destructive behavior occurred on days when both actors *and* partners felt-loved was low (*mutual felt-unloved*).

Study 1

Supplemental Studies 1 and 2 provided preliminary evidence that actors' and partners' feelings of being loved combine to predict actors' destructive behavior within relationship interactions each day. However, examining processes across a range of interactions within a day does not tightly focus on a specific interaction where partners have to negotiate conflicting interests, wherein the links between feeling unloved and destructive behavior may be particularly salient. Moreover, daily records rely on self-reports of destructive behavior that could reduce the precision in testing dyadic patterns due to reporting biases and/or method variance. For these reasons, the primary studies we present examine the dyadic effects of felt-loved during couples' discussion in the laboratory and gathering observer ratings of destructive behavior. In Study 1, couples were video recorded discussing an area of relationship conflict, and then reported how much they felt loved during the conflict discussion. Independent coders rated how much each person exhibited destructive and loving behavior toward their partner (see Table 2).

Method

Participants

Study 1 involved 143 (138 mixed-gender, 5 same-gender) couples recruited via advertisements posted across a large city-based university in New Zealand (e.g., health and

recreation centers). Couples were involved in serious relationships (52.5%

married/cohabitating) for an average of 3.60 years ($SD = 5.03$, range $= 1$–51.67), and whose

average age was 24.83 ($SD = 7.52$, range $= 18$–78). Couples were reimbursed NZ$100. This

study received ethics approval. See OSM for more details about how sample size was

determined. Post hoc power analyses using Monte Carlo simulations with 10,000 repetitions

modeling the effects of each dyad member with equality constraints based on the parameter

estimates from our primary analyses (Bolger & Laurenceau, 2013) revealed good statistical

power (.89 to .99) to detect the actor, partner, and actor × partner effects.

Materials and Procedure

During a laboratory session, participants completed questionnaires and identified and

ranked in importance the three most serious relationship conflicts. Following a warm-up

discussion, couples had a 7-minute discussion about the most serious and ongoing issue

identified by one of the couple members (assignment randomly determined prior to the

session). Couples were instructed to talk about the issue as they normally would. Immediately

following the conflict discussion, each dyad member independently completed assessments

of how much they felt loved during the conflict discussion. Independent coders also rated the

degree to which each dyad member exhibited destructive and loving behavior during the

conflict discussion.

Questionnaire Measures.

Attachment Anxiety and Self-Esteem. Participants completed the Adult Attachment

Questionnaire (Simpson, 1990; Simpson et al., 1996) to assess attachment anxiety ($M = 3.05$,

$SD = 1.09$, $\alpha = .81$) and the Rosenberg (1965) Self-Esteem Scale to assess self-esteem (M =

5.17, SD = 1.09, $\alpha = .88$).

Table 3.   Descriptive Statistics of all Measures

Measures	Interaction 1			Interaction 2			Interaction 3			Interaction 4		
	Mean	(*SD*)	Range	Mean	(*SD*)	Range	Mean	(*SD*)	Range	Mean	(*SD*)	Range
Study 1	*Conflict Discussion*											
Felt-Loved	6.00	(1.27)	1.00 - 7.00									
Observed Destructive Behavior	1.36	(0.77)	1.00 - 7.00									
Observed Loving Behavior	2.31	(0.77)	1.00 - 5.33									
Study 2	*Discussion of Diverging Preferences*											
Felt-Loved	5.65	(1.05)	2.00 - 7.00									
Observed Destructive Behavior	1.69	(0.44)	0.88 - 3.10									
Observed Positive Behavior	2.40	(0.33)	1.42 - 3.21									
Study 3	*Conflict Discussion*			*Family Activity*								
Felt-Loved	6.03	(1.15)	1.33 - 7.00	5.81	(1.16)	1.00 - 7.00						
Observed Destructive Behavior	1.62	(0.76)	1.00 - 6.11	1.49	(1.12)	1.00 - 7.00						
Observed Loving Behavior	1.78	(0.54)	1.00 - 4.32	2.26	(1.23)	1.00 - 6.67						
Study 4	*Conflict Discussion*			*Conflict Discussion*								
Felt-Loved	5.16	(1.35)	1.02 - 7.00	5.20	(1.44)	1.00 - 7.00						
Observed Destructive Behavior	1.86	(0.96)	1.00 - 5.86	1.84	(0.93)	1.00 - 4.95						
Observed Loving Behavior	2.47	(0.79)	1.00 - 4.36	2.51	(0.83)	1.00 - 4.86						
Study 5	*Conflict Discussion*			*Relationship Strengths Discussion*			*Conflict Discussion*			*Family Activity*		
Felt-Loved	5.44	(1.47)	1.00 - 7.00	6.10	(1.21)	1.00 - 7.00	5.47	(1.45)	1.00 - 7.00	5.39	(1.36)	1.00 - 7.00
Observed Destructive Behavior	1.62	(1.01)	1.00 - 7.00	1.27	(0.60)	1.00 - 6.65	1.59	(0.99)	1.00 - 6.50	1.47	(0.99)	1.00 - 7.00
Observed Loving Behavior	2.14	(0.72)	1.00 - 4.89	2.60	(0.85)	1.00 - 6.20	2.06	(0.69)	1.00 - 4.79	2.17	(1.12)	1.00 - 7.00

Note. All measures represent averages of items on 1-7 likert-type scales, except for observed destructive and positive behavior in Study 2 that represent average ratings on 0-6 likert-type scale. In general, the observed range matched the possible range across studies. In Studies 1 (conflict discussion), 3 and 5 (family activity), observed destructive and loving behavior represents averages of independent coders' ratings across the interaction. In Studies 2-5 (couples' discussions of diverging preferences, conflict, and relationship strengths), observed destructive and loving behavior represents averages of independent coders' ratings for each 30-second segment of the discussion, and these 10-14 segment scores averaged across the discussion.

Conflict Discussion Measures.

Felt-Loved. Immediately following the conflict discussion, participants rated three items similar to those in Supplemental Studies 1 and 2 to assess how much they felt loved by their partner during the conflict discussion ("I felt cared for/loved by my partner"; "I felt accepted/valued by my partner"; "I felt understood/validated by my partner"; 1 = *not at all,* 7 = *very much*). The items were averaged to construct an overall measure of felt-loved (αs = .94; see Table 3).

Destructive Behavior. Three trained coders who were unaware of the aims of the present research independently rated the same two items in Supplemental Studies 1 and 2: "this person acted in a way that was hurtful to their partner" and "this person was critical or unpleasant to their partner" (1 = *not at all*, 7 = *very much*). Each couple member was coded in separate viewings (order across gender was counterbalanced). Coders' ratings were reliable (consistency-type intraclass correlation coefficients [ICCs] = .88-.95), and averaged (α = .96) to create destructive behavior scores (see Table 3). In our primary analyses, we modelled the effects of actors' and partners' felt-loved on *actors'* destructive behavior.

Loving Behavior. The same team of trained coders also rated three items to assess how much each person exhibited loving behavior during the conflict discussion: "this person was warm/affectionate towards their partner"; "this person was compassionate towards their partner"; and "this person was empathetic towards their partner (1 = *not at all*, 7 = *very much*). Being warm, affectionate, compassionate, and empathetic convey love, caring, and understanding and are good indices of loving behavior. Coders' ratings were reliable (ICCs = .73-90) and averaged (α = .92) to create loving behavior scores (see Table 3).

Results

  Actors' and partners' felt-loved was correlated at .55.[3] The size of this correlation,

and inspection of the scatterplot (see OSM), indicate a fair representation of couples

experiencing similar or different relative levels of felt-loved during the conflict discussion.

Primary Analyses: Dyadic Effects of Feeling Loved on Destructive Behavior

  We applied the dyadic multilevel modeling procedures outlined by Kenny et al.

(2006) to model the degree to which actors' felt-loved, partners' felt-loved, and actors' ×

partners' felt-loved predicted actors' destructive behavior during couples' conflict

discussions (see https://osf.io/m4jnd/?view_only=d916b0f8f5d8462e93ff24f297263158 for

data and syntax to replicate these analyses). As shown in Table 4, a significant actors' ×

partners' felt-loved interaction emerged (shown in bold). Decomposing the interaction

revealed a *Strong-Link/Mutual Felt-Unloved* pattern consistent with that depicted in Figure 1,

Panel B. As shown in Figure 3, actors' lower felt-loved predicted greater destructive behavior

when partners also experienced lower felt-loved (solid line; $b = -.17$, $t = -4.45$, $p < .001$, $r =$

.35) but not when partners reported higher felt-loved (dashed line; $b = -.02$, $t = -.42$, $p = .675$,

$r = .04$). Accordingly, actors whose felt-loved was low showed greater destructive behavior

when partners' felt-loved was low compared to when partners' felt-loved was high (left side

of figure; $b = -.20$, $t = -5.31$, $p < .001$, $r = .41$). Actors whose felt-loved was high showed

similarly low levels of destructive behavior across levels of partners' felt-loved (right side of

figure; $b = -.06$, $t = -1.06$, $p = .293$, $r = .09$). This pattern supports that partners' high felt-

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[3] Across studies, we assumed couples were distinguishable because nearly all were mixed-gender couples. Tests of distinguishability confirmed that means and/or variances differed significantly by gender across studies. The correlation we report represent the zero-order correlation between distinguishable partners and thus the actor and partner variables entered into the model assess actor and partner effects. Given dyads were distinguishable, we also controlled for the main effect of gender (-1 = women, 1 = men; see Kenny et al., 2006) across analyses. We ran additional analyses examining whether the effects differed across gender. In Supplemental Studies 1 and 2, gender differences emerged for daily variations in actors' × partners' felt-loved on destructive behavior, but decomposing the interaction revealed that the *Strong-Link/Mutual Felt Unloved* pattern was evident for both women and men. In Supplemental Study 3 and Studies 1-5, there were no gender differences in the effects of actors' × partners' felt-loved.

loved can buffer the damaging effect of actors feeling unloved on destructive behavior (*strong link*), such that higher actors' destructive behavior occurs when both actors *and* partners feel unloved (*mutual felt-unloved*; as depicted in Figure 1, Panel B).

Table 4. **The Effects of Actors' and Partners' Felt-Loved on Actors' Destructive Behavior within Couples' Conflict Discussion (Study 1)**

| Predictors | Actors' Destructive Behavior | | | | | |
| | | | 95% CI | | | |
	B	*t*	Low	High	*p*	*r*
Intercept	1.30	31.97	1.224	1.385	<.001	.94
Actors' Felt-Loved	-.10	-2.39	-.177	-.017	.018	.15
Partners' Felt-Loved	-.13	-3.27	-.208	-.052	.001	.22
Actors' × Partners' Felt-Loved	**.06**	**3.27**	**.023**	**.094**	**.001**	**.27**

Note. The significant actors' × partners' felt-loved interaction shown in bold is presented in Figure 3. CI = confidence interval. Effect sizes (*r*) were computed using Rosenthal and Rosnow's (2007) formula: $r = \sqrt{t^2 / t^2 + df}$. The Satterthwaite approximation is applied to provide specific degrees of freedom for each effect, which were used to calculate the effect sizes.
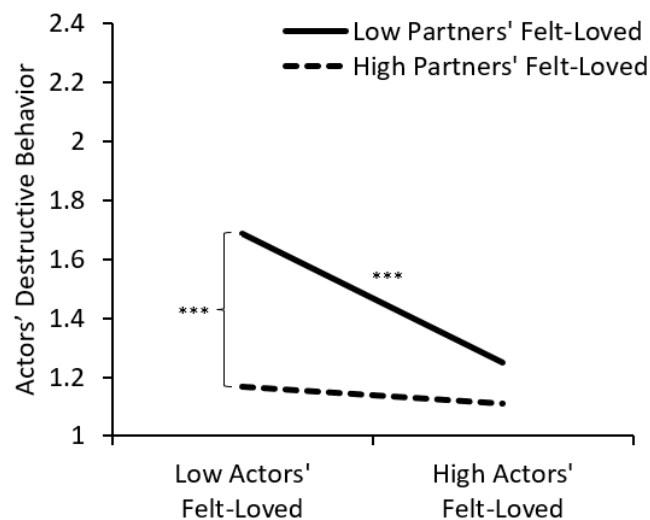
Figure 3. The effects of Actors' and Partners' Felt-Loved on Actors' Destructive Behavior within Couples' Conflict Discussion (Study 1).

Note. Low and high levels of Actors' and Partners' Felt-Loved represent 1 *SD* below and above the mean. The simple effects of the slopes and contrasts are marked [***]$p < .001$.

Secondary Analyses: Role of Partners' Behavior

We theorized that one reason a *Strong-Link/Mutual Felt-Unloved* pattern may emerge is because partners feeling loved may enact greater *loving* behavior, which in turn buffers the negative effect of actors feeling unloved on greater destructive behavior. To evaluate this

mediated moderation pattern (see Figure 2; Muller et al., 2005), the first step involves examining whether partners' felt-loved predicted partners' loving behavior (Path A of Figure 2) and whether actors' felt-loved × partners' loving behavior showed a similar strong-link effect on actors' destructive behavior as actors' × partners' felt-loved (Path B of Figure 2). If these two conditions are met, then tests of mediated-moderation involve simultaneously modelling the actors' × partners' felt-loved interaction and actors' felt-loved × partners' loving behavior interaction. Mediated moderation would be supported if the actors' × partners' felt-loved interaction was reduced, and significant indirect effects supported the mediating pathway. Although partners' felt-loved predicted greater partners' loving behavior ($b = .15$, $t = 4.15$, $p < .001$, $r = .26$), actors' felt-loved × partners' loving behavior did not significantly interact to predict actors' destructive behavior ($b = .06$, $t = 1.46$, $p = .146$, $r = .10$). These analyses indicated that partners' loving behavior could not have explained the strong-link effect of partners' high felt-loved in Figure 3. Nonetheless, we ran analyses modeling all effects needed to specify actors' × partners' felt-loved and actors' felt-loved × partners' loving behavior interactions simultaneously. The significant actors' × partners' felt-loved interaction was not reduced ($b = .07$, $t = 3.42$, $p = .001$, $r = .27$).[4]

Additional Analyses

Chronic Feelings of Being Unloved. We conducted additional analyses to illustrate that the effect of actors' × partners' felt-loved within couples' interactions was independent of individual differences that capture chronic vulnerabilities in feeling unloved. As detailed in the OSM, actors' × partners' attachment anxiety did not significantly interact to predict

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[4] Although partners' destructive behavior was a more likely explanation for a weak-link than strong-link pattern (see Figure 2), for completeness, we also examined whether partners' lower destructive behavior played a role in the strong-link effect of partners' high felt-loved. Partners' higher felt-loved predicted lower partners' destructive behavior ($b = -.25$, $t = -7.93$, $p < .001$, $r = .49$), but actors' felt-loved × partners' destructive behavior did not significantly interact to predict actors' destructive behavior ($b = .03$, $t = 1.08$, $p = .281$, $r = .07$). Thus, partners' lower destructive behavior did not explain the strong-link effect of partners' high felt-loved. Accordingly, rerunning the primary analyses when also modelling the effects of actors' felt-loved × partners' loving behavior did not reduce the significant actors' × partners' felt-loved interaction shown in Figure 3 ($b = .10$, $t = 4.64$, $p < .001$, $r = .27$).

actors' destructive behavior. A significant interaction of actors' × partners' self-esteem emerged, but this pattern did not align with a strong-link or weak-link pattern: actors' higher self-esteem was associated with lower destructive behavior when partners' self-esteem was low but not high. Nonetheless, simultaneously modelling actors' × partners' felt-loved revealed that the actors' × partners' felt-loved interaction shown in Figure 3 remained significant (see OSM), indicating that the dyadic effects of felt-loved within couples' interactions were independent of individual difference vulnerabilities in feeling unloved.

Supplemental Study 3

Study 1 provided confirming evidence that the *Strong-Link/Mutual Felt-Unloved* pattern of actors' × partners' felt-loved on destructive behavior emerged during couples' conflict discussions as it did during couples' daily interactions in Supplemental Studies 1-2. We next turned to existing samples advertised on the Love Consortium database to test whether the obtained dyadic pattern replicated within daily life (Supplemental Study 3) and couples' lab-based interactions (Study 2). Supplemental Study 3 involved newlywed couples recruited throughout US and Canada. Each day for 14 days, both couple members reported how much they felt loved and whether or not they enacted destructive behavior using items that had strong conceptual similarities to those in the prior studies (see Table 2). Again, daily variations in actors' and partners' felt-loved significantly interacted to predict actors' daily destructive behavior, replicating the *Strong-Link/Mutual Felt-Unloved* pattern (depicted in Figure 1, Panel B). As shown in the OSM, the damaging effect of actors' low felt-loved and destructive behavior was weaker on days when partners' felt-loved was high (*strong link*), resulting in the highest levels of actors' destructive behavior occurring on days when both actors *and* partners felt-loved was low (*mutual felt-unloved*).

Study 2

Study 2 was also drawn from the Love Consortium database, which we applied to replicate the *Strong-Link/Mutual Felt-Unloved* pattern during couples' lab-based conflict-of-interest interactions as shown in Study 1. Couples were video recorded discussing an area in the relationship involving diverging preferences, and then reported how much they felt loved during the discussion. Independent coders rated how much each person exhibited verbal and nonverbal destructive and positive behavior (see Table 2).

Method

Participants

Study 2 involved 130 couples (129 mixed-gender, 1 same-gender) recruited in The Netherlands by personal contact or through various websites and social networks. To be eligible for the study, couples were required to speak fluent Dutch, not have any children, and be involved in relationships of at least 4 months in length. Five couples and 1 participant were excluded from analyses because they did not follow the instructions for the video-recorded discussion. The remaining 124 couples (35.5% cohabitating and 2.4% married) had an average relationship length of 2.84 years (*SD* = 2.44, range = 4–17) and average age of 23.37 years (*SD* = 3.67, range = 18–43). This study received ethics approval. Couples were reimbursed €80 in addition to entering a raffle for a bonus of €200. See OSM for how sample size was determined and prior use of this sample. We could not conduct post hoc power analyses using Monte Carlo Simulations due to convergence issues. However, given that Study 1, which also involved couples' lab-based interactions, yielded ample statistical power based on 143 couples, and Study 2 involved 124 couples with two types of behavioral ratings (verbal and nonverbal) for each person, it is likely that we had adequate statistical power if the effects replicated with the measures contained in this study.

Materials and Procedure

During a laboratory session, couples completed questionnaires and then had a 7-minute discussion about an area in the relationship involving diverging preferences (e.g., one person likes to visit his or her family on the weekends but their partner prefers to spend time with common friends). Couples were instructed to talk about the issue as they normally would. Immediately following the discussion, each dyad member completed assessments of how much they felt loved during the discussion. Independent coders also rated the degree to which each person exhibited verbal and nonverbal destructive and positive behavior during the discussion.

Questionnaire Measures.

Attachment Anxiety and Self-Esteem. Participants completed the same scales used in Study 1 to assess attachment anxiety ($M = 2.52$, $SD = 0.92$, $\alpha = .61$) and self-esteem ($M = 5.45$, $SD = 0.97$, $\alpha = .89$).

Conflict Discussion Measures.

Felt-Loved. Immediately following the discussion, participants rated three items similar to that in the prior studies (see Table 2) assessing how much they felt loved (my partner "… cared for me"; "… appreciated who I really am"; "… understood me"; 1 = *strongly disagree, 7 = strongly agree*). The items were averaged ($\alpha = .80$; see Table 3).

Destructive Behavior. Trained coders independently rated how much each participant exhibited (a) verbal and (b) nonverbal destructive behavior during the discussion. The coding of destructive behaviors comprised three components: hostility, withdrawal, and dysphoric affect (Faure et al., 2018; see OSM for more details). This assessment of destructive behavior is broader than the measures of destructive behavior in the prior studies that focused on the hostility component of this scheme (see Table 2). Coders were given detailed descriptions of the three components of destructive behavior. The present study was originally designed for the purpose of distinguishing verbal and nonverbal behaviors, and so verbal and nonverbal

behaviors were coded separately by a different team of coders. For verbal coding, three Dutch coders read transcriptions of the verbal content of the conversations and rated the levels of each person's verbal destructive behavior within each 30-second segment of the discussion (0 = *none/neutral*, 6 = *very high*). For nonverbal coding, three non-Dutch raters who did not understand the Dutch language viewed the videotaped discussions and rated the levels of each person's nonverbal destructive behavior within each 30-second segment of the discussion (0 = *none/neutral*, 6 = *very high*). Each dyad member was coded in separate reading/viewings (order counterbalanced). Coders' verbal (ICCs = .71-.80) and nonverbal (ICCs = .37-.50) ratings of destructive behavior were averaged for each 30-second segment, and then averaged across the discussion (α = .90 for verbal and α = .92 for nonverbal destructive behavior; see Table 3).

Positive Behavior. Study 2 did not have a clear measure of loving behavior exhibited during couples' discussion that matched the operationalization of loving behavior across studies (see Table 2). However, trained coders did rate how much each person exhibited verbal and nonverbal positive behavior during the discussion. Positive behaviors include two subcategories: openness and humor/positive affect (Faure et al., 2018; see OSM for more details). The coding procedures were the same as that for destructive behavior. Coders' verbal (ICCs = .52-.66) and nonverbal (ICC = .74-.78) ratings of positive behavior were averaged for each 30-second segment, and then averaged across the discussion (α = .83 for verbal and α = .90 for nonverbal positive behavior; see Table 3).

Results

The correlation between actors' and partners' felt-loved was similar to Study 1 (*r* = .52). The size of this correlation, and inspection of the scatterplot (see OSM), indicate a fair representation of couples experiencing similar or different levels of felt-loved during the discussion.

Primary Analyses: Dyadic Effects of Feeling Loved on Destructive Behavior

The aims of the original study involved distinguishing between verbal and nonverbal components of destructive behavior, but our investigation examining the effects of felt-loved on destructive behavior is relevant to both verbal and nonverbal components of destructive behavior. Accordingly, we ran our primary analyses with the verbal and non-verbal measures of destructive behavior nested within individuals, and individuals nested within couples (see https://osf.io/m4jnd/?view_only=d916b0f8f5d8462e93ff24f297263158 for data and syntax to replicate these analyses). We applied repeated-measures dyadic regression procedures outlined by Kenny et al. (2006) to model the degree to which actors', partners', and actors' × partners' felt-loved predicted actors' destructive behavior during couples' discussions, and included the main and interaction effects of behavioral type (verbal = -1; nonverbal = 1) to test whether the effects differed across verbal and nonverbal ratings.[5]

As shown in Table 5, significant actors' × partners' felt-loved on actors' destructive behavior emerged (shown in bold), and this effect did not differ across verbal versus nonverbal ratings of destructive behavior (shown by the nonsignificant 3-way interaction of actors' × partners' felt-loved × destructive behavior type). Despite the actors' × partners' felt-loved interaction effect being relatively weaker than in Study 1, decomposing the interaction revealed a *Strong-Link/Mutual Felt-Unloved* pattern. As shown in Figure 4, actors' lower felt-loved predicted greater destructive behavior when partners also experienced lower felt-loved (solid line; $b = -.14$, $t = -4.63$, $p < .001$, $r = .30$), but not when partners' felt-loved was high (dashed line; $b = -.03$, $t = -.65$, $p = .518$, $r = .04$). Accordingly, actors whose felt-loved was low showed greater destructive behavior when partners' felt-loved was low compared to when partners' felt-loved was high (left side of figure; $b = -.17$, $t = -5.43$, $p < .001$, $r = .35$).

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[5] Nesting verbal and nonverbal ratings of destructive behavior within individuals had the advantages of accounting for the dependence across the two ratings of destructive behavior and providing the means to directly test for differences across verbal versus nonverbal destructive behavior. Averaging verbal and nonverbal destructive behavior scores across the discussion yielded similar results.

Actors whose felt-loved was high showed similarly low levels of destructive behavior across levels of partners' felt-loved (right side of figure; $b = -.05$, $t = -1.21$, $p = .23$, $r = .08$). This interaction pattern provides supporting evidence that partners' high felt-loved can buffer the damaging effect of actors' low felt-loved on destructive behavior (*strong link*), such that actors' destructive behavior is highest when both actors *and* partners feel unloved (*mutual felt-unloved*; as depicted in Figure 1, Panel B).

Table 5. **The Effects of Actors' and Partners' Felt-Loved on Actors' Destructive Behavior within Couples' Discussion about Different Preferences (Study 2)**

			Actors' Destructive Behavior			
			95% CI			
Predictors	*B*	*t*	Low	High	*p*	*r*
Intercept	1.68	50.82	1.611	1.741	<.001	.96
Actors' Felt-Loved	-.08	-3.42	-.133	-.036	.001	.16
Partners' Felt-Loved	-.11	-4.36	-.156	-.059	<.001	.21
Actors' × Partners' Felt-Loved	**.06**	**2.19**	**.005**	**.105**	**.030**	**.15**
Beh Type	.67	20.27	.602	.732	<.001	.81
Actors' Felt-Loved × Beh Type	.04	1.52	-.011	.086	.129	.07
Partners' Felt-Loved × Beh Type	.08	3.19	.030	.127	.002	.15
Actors' × Partners' Felt-Loved × Beh Type	.01	.31	-.042	.058	.755	.02

Note. Beh Type = type of destructive behavior (verbal = -1; nonverbal = 1). The significant actors' × partners' felt-loved interaction effect shown in bold is presented in Figure 4. CI = confidence interval. Effect sizes (*r*) were computed using Rosenthal and Rosnow's (2007) formula: $r = \sqrt{(t^2 / t^2 + df)}$. The Satterthwaite approximation is applied to provide specific degrees of freedom for each effect, which were used to calculate the effect sizes.

Secondary Analyses: Role of Partners' Behavior

We again tested whether the *Strong-Link/Mutual Felt-Unloved* pattern emerged because partners who were high in felt-loved enacted greater *loving* behavior, which in turn buffered the negative effect of actors feeling unloved on greater destructive behavior (see Figure 2). Unlike Study 1, partners' felt-loved did not significantly predict partners' positive behavior ($b = .02$, $t = 1.13$, $p = .258$, $r = .05$; regardless of verbal vs. nonverbal ratings: $b = .02$, $t = .71$, $p = .479$, $r = .03$). Actors' felt-loved × partners' positive behavior also did not significantly interact to predict actors' destructive behavior ($b = -.06$, $t = -1.45$, $p = .149$, $r =$

.08; regardless of verbal vs. nonverbal ratings: $b = .05$, $t = 1.28$, $p = .201$, $r = .07$). Thus, partners' positive behavior did not explain the strong-link effect of partners' high felt-loved. Accordingly, rerunning the primary analyses when also modelling the effects of actors' felt-loved × partners' positive behavior did not reduce the actors' × partners' felt-loved interaction shown in Figure 4 ($b = .06$, $t = 2.29$, $p = .023$, $r = .16$).[6]
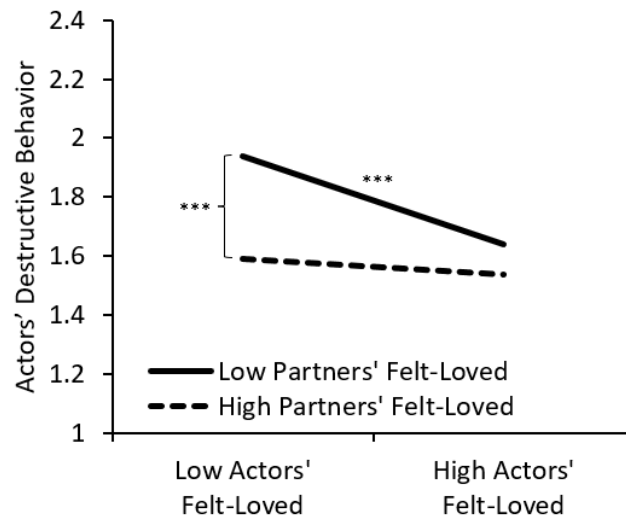

Figure 4. *The effects of Actors' and Partners' Felt-Loved on Actors' Destructive Behavior within Couples' Discussion about Different Preferences (Study 2).*

     Note. Low and high levels of Actors' and Partners' Felt-Loved represent 1 *SD* below and above the mean. The simple effects of the slopes and contrasts are marked [***]$p < .001$.

Additional Analyses

Chronic Feelings of Being Unloved. There were no significant interactions between actors' × partners' attachment anxiety or actors × partners' self-esteem predicting actors' destructive behavior, and controlling for these indicators of chronic felt-(un)loved did not alter the actors' × partners' felt-loved interaction (see OSM).

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[6] We also assessed the potential role of partners' destructive behavior. Partners' higher felt-loved predicted lower partners' destructive behavior ($b = -.11$, $t = -4.38$, $p < .001$, $r = .20$; regardless of verbal vs. nonverbal ratings: $b = .04$, $t = 1.59$, $p = .112$, $r = .08$), but the actors' felt-loved × partners' destructive behavior was not significant ($b = .06$, $t = 1.81$, $p = .071$, $r = .09$; regardless of verbal vs. nonverbal ratings: $b = -.06$, $t = -1.63$, $p = .105$, $r = .08$). Thus, partners' lower destructive behavior did not explain the strong-link effect of partners' high felt-loved. Accordingly, rerunning the primary analyses when also modelling the effects of actors' felt-loved × partners' destructive behavior did not reduce the significant actors' × partners' felt-loved interaction shown in Figure 4 ($b = .06$, $t = 3.05$, $p = .002$, $r = .15$).

Study 3

Study 2 provided replication support for the *Strong-Link/Mutual Felt-Unloved* pattern of actors' × partners' felt-loved on actors' destructive behavior during couples' lab-based conflict-of-interest discussions that was shown in Study 1, despite a different and more diffuse assessment of destructive behavior. In Study 3, we aimed to replicate and extend the *Strong-Link/Mutual Felt-Unloved* pattern of felt-loved within two interaction contexts: couples' conflict discussions and family interactions involving couples working together with their 4-5 year old child. In addition, because the correlational nature of data collected within the same interaction prevents conclusions about the direction of effects, in Study 3 we examined evidence of causal direction by testing whether actors' × partners' felt-loved in couples' conflict discussions carry over to shape actors' destructive behavior in the subsequent family interaction. Couples were video recorded discussing an area of relationship conflict as in Study 1 and then video recorded participating in a family activity with their child. Family interactions provide a context to examine whether couples can recover from conflict to work together and co-parent their child. Immediately after each interaction, each participant reported how much they felt loved by their partner during the interaction. Independent coders rated how much each person exhibited destructive and loving behavior within each interaction (see Table 2).

Method

Participants

The sample included 104 couples (103 mixed-gender, 1 same-gender) and their 4-5-year-old child. Families were recruited via advertisements posted around community boards, early childhood centers, on Facebook, and at annual parenting events in New Zealand. Two families were excluded from analyses because of video recording equipment failure or the parents did not speak English during the discussion. The remaining 102 families included parents who were married (84.3%) or cohabitating (15.7%) with an average relationship

length of 11.71 years (*SD* = 4.06, range = 1.5–23). Average age was 36.87 years (*SD* = 6.35, range = 21-66 years) for parents and 4.98 years (*SD* = 0.31, range = 4.5-5.5) for children. This study received ethics approval. Each family was reimbursed NZD$100. See OSM for how sample size was determined and prior use of this sample. Post hoc power analyses using Monte Carlo simulations with 1,000 repetitions modeling the effects of each dyad member with equality constraints based on the parameter estimates from our primary analyses (Bolger & Laurenceau, 2013) revealed good statistical power (.98 to 1.00) to detect the actor, partner, and actor × partner effects.

Materials and Procedure

During a laboratory session, parents completed questionnaires and engaged in a video-recorded conflict discussion while their children participated in a series of tasks (unrelated to this study) in a separate room. Parents independently identified and ranked in importance their two most serious relationship conflicts. Following a warm-up discussion, couples had a 7-minute discussion about the highest-ranked issue shared by both partners. Couples were instructed to talk about the issue as they normally would. Immediately following the discussion, each dyad member completed assessments of how much they felt loved during the conflict discussion. Parents were then reunited with their child to participate in a family activity. Families were given paper materials and were instructed to work together as a family to build the best tower they can within 10 minutes. Immediately following the activity, parents completed assessments of how much they felt loved by their partner during the family interaction. Independent coders rated the degree to which each parent exhibited destructive and loving behavior during the conflict discussion and family activity.

Questionnaire Measures.

Attachment Anxiety. Participants completed the same scale used in Studies 1-2 to assess attachment anxiety (*M* = 2.70, SD = 0.98, α = .78). We did not assess self-esteem.

Conflict Discussion Measures.

Felt-Loved. Immediately following the discussion, participants rated the same items as in Study 1 to assess how much they felt loved during the conflict discussion ($\alpha = .91$; see Table 3).

Destructive Behavior. Three trained coders independently rated how much each participant exhibited destructive behavior during the conflict discussion. The destructive behaviors coded were selected for their consistency across major coding systems, including: (a) criticizing, derogating or blaming, (b) threatening or commanding, (c) expressing anger and irritation, and (d) being rejecting, invalidating or domineering (Overall, 2018; see OSM for more details). Coders were given detailed descriptions of this category of behaviors, and then rated the levels of each person's destructive behavior within each 30-second segment of the conflict discussion ($1 = low$, $7 = high$). Each couple member was coded in separate viewings (order counterbalanced). Coders' ratings were averaged for each 30-second segment (ICCs = .92-.95), and then averaged across the discussion ($\alpha = .94$) to create destructive behavior scores during the conflict discussion (see Table 3).

Loving Behavior. A different team of trained coders independently rated how much each person exhibited loving behavior during the conflict discussion. The loving behaviors were adapted from Maisel and colleagues (2008). Coders used detailed descriptions of (1) caring, (2) understanding, and (3) validation (see OSM for more details) to rate how much each person exhibited caring, understanding, and validation across the conflict discussion ($1 = low$, $7 = high$). Coders' ratings were reliable (ICCs = .90-.94) and were averaged ($\alpha = .85$; Table 3).

Family Activity Measures.

Felt-Loved. Immediately following the family activity, participants rated the same items as in Study 1 and after the conflict discussion to assess how much they felt loved by

their partner during the family activity ($\alpha = .90$; see Table 3).

Destructive Behavior. A different team of three trained coders than those who rated destructive behavior during the conflict discussion independently rated how much each parent exhibited destructive behavior toward their partner during the family activity. The destructive behaviors coded were adapted from established coparenting coding systems that assess hostility between couples during interactions with their children (Cowan & Cowan, 2002; Schoppe et al., 2001; see OSM for more details). Coders rated the degree to which each parent exhibited the same type of destructive behaviors assessed during the couple's conflict discussion applied to the coparenting setting, including blaming, criticizing, and expressing frustration toward the partner. Following detailed descriptions of these behaviors, coders rated the presence of each parent's destructive behavior across the family activity (1 = *low*, 7 = *high*). Coders' ratings were reliable (ICC = .92) and averaged to create an overall score of each parent's destructive behavior toward their partner during the family activity.

Loving Behavior. The same team of coders who rated destructive behavior during the family activity also rated how much each person exhibited loving behavior. Similar types of loving behaviors assessed during the couples' conflict discussion were applied to the coparenting setting, including expressing affection, warmth and positive regard (1 = *low*, 7 = *high*; see OSM for more details). Coders' ratings were reliable (ICC = .83) and averaged to assess loving behavior (see Table 3).

Results

As in Studies 1 and 2, actors' and partners' felt-loved scores were relatively highly correlated during the conflict discussion ($r = .60$) and family activity ($r = .41$). Nonetheless, the scatterplots (see OSM) indicate a fair representation of couples experiencing relatively similar or different levels of felt-loved.

Primary Analyses: Dyadic Effects of Feeling Loved on Destructive Behavior

We nested felt-loved and destructive behavior within the conflict discussion and family to account for dependence across the two interactions and directly test for differences across the interaction contexts (see https://osf.io/m4jnd/?view_only=d916b0f8f5d8462e93ff2 4f297263158 for data for syntax to replicate these analyses). We applied repeated-measures dyadic regression procedures (Kenny et al., 2006) to model the degree to which actors' felt-loved, partners' felt-loved, and actors' × partners' felt-loved predicted actors' destructive behavior, and included the main and interaction effects of the type of interaction (conflict discussion = -1 and family activity = 1) to test whether the effects differed across the two types of interaction. As shown in Table 6, the actors' × partners' felt-loved interaction on actors' destructive behavior was significant (shown in bold), and this effect did not differ across the conflict discussion and family activity, providing support that the effects replicated within both interaction contexts.

Table 6.   The Effects of Actors' and Partners' Felt-Loved on Actors' Destructive Behavior within Couples' Conflict Discussion and Family Interaction (Study 3)

| Predictors | Actors' Destructive Behavior | | | | | |
| | | | 95% CI | | | |
	B	t	Low	High	p	r
Intercept	1.50	26.17	1.384	1.610	<.001	.88
Actors' Felt-Loved	-.11	-2.61	-.196	-.027	.009	.13
Partners' Felt-Loved	-.16	-3.82	-.248	-.079	<.001	.19
Actors' × Partners' Felt-Loved	**.11**	**3.37**	**.046**	**.175**	**.001**	**.24**
Interaction Type	-.11	-1.86	-.219	.007	.065	.13
Actors' Felt-Loved × Interaction Type	-.02	-.40	-.101	.067	.688	.02
Partners' Felt-Loved × Interaction Type	.07	1.66	-.013	.155	.098	.09
Actors' × Partners' Felt-Loved × Interaction Type	.05	1.47	-.016	.113	.142	.11

Note. Interaction Type = type of interaction (-1 = conflict discussion; 1 = family activity). The significant actors' × partners' felt-loved interaction effect shown in bold is presented in Figure 5. CI = confidence interval. Effect sizes (r) were computed using Rosenthal and Rosnow's (2007) formula: $r = \sqrt{(t^2 / t^2 + df)}$. In these multilevel models, the Satterthwaite approximation is applied to provide specific degrees of freedom for each effect, which were used to calculate the effect sizes.

As shown in Figure 5, a *Strong-Link/Mutual Felt-Unloved* pattern was evident. Actors' lower felt-loved predicted greater destructive behavior when partners also experienced lower felt-loved (solid line; $b = -.24$, $t = -5.59$, $p < .001$, $r = .38$), but not when partners' felt-loved was high (dashed line; $b = .02$, $t = .23$, $p = .817$, $r = .02$). Accordingly, actors who felt less loved showed greater destructive behavior when partners' felt-loved was low compared to when partners' felt-loved was high (left side of figure; $b = -.29$, $t = -6.79$, $p < .001$, $r = .44$), but actors who felt more loved showed similarly low levels of destructive behavior across levels of partners' felt-loved (right side of figure; $b = -.04$, $t = -.52$, $p = .601$, $r = .04$). This pattern provides replicated evidence that partners' high felt-loved can buffer the effect of actors feeling unloved on destructive behavior (*strong link*), such that higher actors' destructive behavior occurs when both actors *and* partners feel unloved (*mutual felt-unloved*).
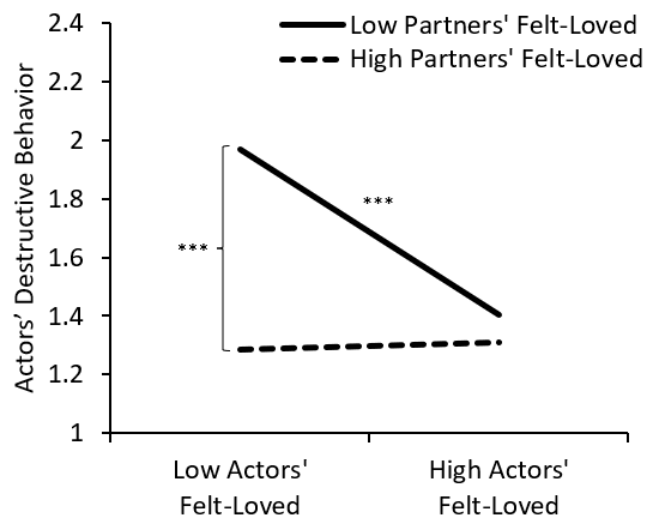

Figure 5. The effects of Actors' and Partners' Felt-Loved on Actors' Destructive Behavior within Couples' Conflict Discussion and Family Interaction (Study 3).

Note. Low and high levels of Actors' and Partners' Felt-Loved represent 1 *SD* below and above the mean. The simple effects of the slopes and contrasts are marked [***]$p < .001$.

Secondary Analyses: Role of Partners' Behavior

Secondary analyses again indicated that partners' loving behavior did not explain the strong-link effect of partners' high felt-loved. Partners' higher felt-loved predicted greater

partners' loving behavior ($b = .32$, $t = 6.27$, $p < .001$, $r = .31$; regardless of the type of interaction: $b = -.02$, $t = -.45$, $p = .654$, $r = .02$), but actors' felt-loved × partners' loving behavior did not significantly interact to predict actors' destructive behavior ($b = .05$, $t = 1.33$, $p = .186$, $r = .07$; regardless of the type of interaction: $b = -.00$, $t = -.06$, $p = .956$, $r = .00$). Accordingly, the actors' × partners' felt-loved interaction shown in Figure 5 remained significant ($b = .12$, $t = 3.26$, $p = .001$, $r = .21$) when also modelling the effects of actors' felt-loved × partners' loving behavior.[7]

Additional Analyses

Chronic Feelings of Being Unloved. A significant actors' × partners' attachment anxiety interaction revealed a *Strong-Link/Mutual Felt-Unloved* pattern within the family activity but not couples' conflict discussion (see OSM). Nevertheless, simultaneously modelling actors' × partners' felt-loved revealed that the actors' × partners' felt-loved interaction remained significant.

Spillover Effects Across Interactions. Our assessment of two sequential interactions provided one way to examine evidence for the direction of links between actors' and partners' felt-loved and actors' destructive behavior by testing spillover effects from the conflict discussion to the family activity. We tested whether the effects occurred in our theorized causal direction by modeling the degree to which actors' felt-loved, partners' felt-loved, and actors' × partners' felt-loved in the conflict discussion predicted actors' destructive behavior in the family activity, controlling for actors' destructive behavior in the conflict discussion (Kenny et al., 2006). The actors' × partners' felt-loved interaction was not

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[7] Similarly, partners' lower *destructive* behavior did not explain the strong-link effect of partners' high felt-loved. Partners' higher felt-loved predicted lower partners' destructive behavior ($b = -.19$, $t = -4.82$, $p < .001$, $r = .24$; regardless of the type of interaction: $b = -.00$, $t = -.06$, $p = .952$, $r = .00$), but actors' felt-loved × partners' destructive behavior did not significantly interact to predict actors' destructive behavior ($b = -.01$, $t = -.19$, $p = .852$, $r = .01$; regardless of the type of interaction: $b = .04$, $t = 1.40$, $p = .162$, $r = .07$). The actors' × partners' felt-loved interaction shown in Figure 5 remained significant ($b = .09$, $t = 3.18$, $p = .002$, $r = .16$) when also modelling the effects of actors' felt-loved × partners' destructive behavior.

significant (see top of Table 7). We also tested whether the effects occurred in the alternative

causal direction; perhaps actors who feel unloved but nonetheless are able to inhibit

destructive behavior might lead to partners subsequently feeling more loved. Modeling

actors' felt-loved, actors' destructive behavior, and actors' felt-loved × actors' destructive

behavior in the conflict discussion as predictors of partners' felt-loved in the family activity

revealed that the actors' felt-loved × destructive behavior interaction was not significant (see

bottom of Table 7). In sum, the dyadic effects located within each interaction supported a

strong-link pattern, but we found no evidence of spillover across interactions.

Table 7. **Tests of Spillover Effects of Actors' and Partners' Felt-Loved in Couples' Conflict Discussion to Actors' Subsequent Destructive Behavior in Family Interaction (Study 3)**

| | Subsequent Outcome in Family Interaction | | | | | |
| | | | 95% CI | | | |
Predictors	B	t	Low	High	p	r
Theorized Spillover Effects: Predicting Actors' Subsequent Destructive Behavior						
Intercept	1.40	12.21	1.171	1.626	<.001	.79
Actors' Destructive Behavior	.41	4.04	.211	.615	<.001	.34
Actors' Felt-Loved	.02	.25	-.147	.191	.800	.02
Partners' Felt-Loved	.15	1.70	-.024	.322	.092	.13
Actors' × Partners' Felt-Loved	.10	1.51	-.032	.230	.136	.15
Reverse Spillover Effects: Predicting Partners' Subsequent Felt-Loved						
Intercept	5.80	63.53	5.615	5.977	<.001	.99
Partners' Felt-Loved	.46	5.94	.310	.619	<.001	.41
Actors' Felt-Loved	-.03	-.42	-.183	.119	.672	.03
Actors' Destructive Behavior	.02	.13	-.246	.280	.900	.01
Actors' Felt-Loved × Destructive Behavior	-.02	-.46	-.127	.079	.644	.04

Note. CI = confidence interval. Effect sizes (r) were computed using Rosenthal and Rosnow's (2007) formula: $r = \sqrt{t^2 / t^2 + df}$. In these multilevel models, the Satterthwaite approximation is applied to provide specific degrees of freedom for each effect, which were used to calculate the effect sizes.

Study 4

Study 3 affirmed that the *Strong-Link/Mutual Felt-Unloved* pattern of actors' ×

partners' felt-loved on actors' destructive behavior replicated within couples' conflict

discussions and extended to couples working together in a family activity with their child. As

in Studies 1-2, partners' loving behavior did not explain the strong-link effect of partners' high felt-loved. The two sequential interactions in Study 3 provided the opportunity to examine evidence of causal direction by testing spillover effects from couples' conflict discussion to a following family activity, but the results revealed no evidence of spillover effects in the theorized or reverse direction. One possibility is that the family activity reduced the possibility of spillover effects to emerge because the less conflictual, risky context limited destructive responses or even created an opportunity for the couple to reunite as a couple focused on their child. By contrast, it is within couples' challenging interactions in particular where feelings of being unloved may arise and create problematic interaction dynamics. Study 4 involved two sequential interactions of couples' conflict discussions—challenging contexts that heighten self-protective concerns and destructive behavior. We aimed to replicate the *Strong-Link/Mutual Felt-Unloved* pattern of felt-loved within couples' conflict discussions, and we tested for spillover effects across discussions to examine whether there was evidence for our theorized direction of effects. Couples were video recorded discussing two areas of relationship conflict in which one couple member (agent) wanted change in the other (target). After both discussions, each person reviewed recordings of their interactions and rated how much they felt loved within each discussion. Independent coders rated how much each person exhibited destructive and loving behavior during each discussion (see Table 2).

Method

Participants

Study 4 involved 180 mixed-gender couples recruited via advertisements posted across a large city-based university in New Zealand (e.g., health and recreation centers). Couples (73% married/cohabitating) had an average relationship length of 2.89 years (SD = 2.12, range = 2 months–13.08 years), and average age of 23.07 years (SD = 4.19, range = 18–

45). Couples were reimbursed NZ$100. This study received ethics approval. The sample size

of Study 4 was near double of Study 3 that also involved sequential interactions, and thus (as

clear in the analyses that follow) Study 4 had sufficient power to detect an actor × partner

effect of the same size as Study 3. However, given that the designs differed and we could not

anticipate the size of the effects for any differences across the two conflict interactions, we

report power to detect smaller effect sizes (as emerged in Study 4): Monte Carlo simulations

with 1,000 repetitions based on the estimates from our primary analyses revealed statistical

power of .98 to 1.00 to detect the actor, partner, and actor × partner effects.

Materials and Procedure

During a laboratory session, parents completed questionnaires measures, and

identified and ranked in importance their three most serious relationship conflicts that

involved desiring change in their partner's thoughts, feelings or behavior. Partners rarely

(4.5%) identified the same issues, in which case those topics were discarded. Couples had

two 7-minute discussions: one discussion focused on an area of conflict involving women (as

agent) wanting change in their partner (target), and the other discussion focused on an area of

conflict involving men (as agent) wanting change in their partner (target; discussion order

was counterbalanced across gender). After both conflict discussions, couples reviewed their

interactions and independently completed assessments of how much they felt loved during

each discussion. Independent coders rated the degree to which each dyad member exhibited

destructive and loving behavior during each discussion.

Questionnaire Measures.

Attachment Anxiety and Self-Esteem. Participants completed the same scale used in

Studies 1-4 to assess attachment anxiety ($M = 3.06$, $SD = 1.09$, $\alpha = .81$) and the same scale

used in Studies 1-3 to assess self-esteem ($M = 5.25$, $SD = 1.04$, $\alpha = .88$).

Conflict Discussion Measures.

Felt-Loved. Participants independently reviewed recordings of their interactions, and rated four items similar to that in Studies 1-3 (see Table 2) to assess how much they felt loved by their partner within each 30-second segment of each conflict discussion ("I felt cared for by my partner"; "I felt accepted by my partner"; "I felt valued by my partner"; "I felt understood by my partner"; 1 = *not at all,* 7 = *very much*). The items were averaged for each 30-second segment and then averaged across each discussion (αs > .78; see Table 3).

Destructive Behavior. Following the coding protocols of destructive behavior during the conflict discussion in Study 3, three trained coders independently rated how much each participant exhibited destructive behavior during each 30-second segment of each conflict discussion (1 = *low*, 7 = *high*). Each couple member was coded in separate viewings (order counterbalanced). Coders' ratings were averaged for each 30-second segment (ICCs > .85), and then averaged across each discussion (α > .80) to create destructive behavior scores (see Table 3).

Loving Behavior. The same team of coders also independently rated how much each person exhibited loving behavior during each 30-second segment of each conflict discussion (1 = *low*, 7 = *high*). Coders were guided by detailed descriptions of loving behaviors that include: (a) attempts to soften conflict, (b) expressing affection and positive affect, (c) emphasizing positive aspects of a partner, and (d) restraining negative reactions (see OSM for more details). Coders' ratings were averaged for each 30-second segment (ICCs > .86), and then averaged across the discussion (αs > .93) to assess loving behavior (see Table 3).

Results

The correlations between actors' and partners' felt-loved within the two conflict discussions were similar to Studies 1-3 (r = .51 and .55). The size of these correlations, and inspection of the scatterplots (see OSM), indicate a fair representation of couples experiencing relatively similar or different levels of felt-loved.

Primary Analyses: Dyadic Effects of Feeling Loved on Destructive Behavior

We nested felt-loved and destructive behavior within the two conflict discussions to account for dependence across the two interactions (see https://osf.io/m4jnd/?view_only=d91 6b0f8f5d8462e93ff24f297263158 for data for syntax to replicate these analyses). We applied repeated-measures dyadic regression procedures (Kenny et al., 2006) to model the degree to which actors' felt-loved, partners' felt-loved, and actors' × partners' felt-loved predicted actors' destructive behavior, and included the main and interaction effects of conflict roles (agent desiring change in partner = -1; target being asked to change = 1) to test whether the effects differed across the two conflict roles. As shown in Table 8, the actors' × partners' felt-loved interaction on destructive behavior was significant (shown in bold), and this effect did not differ across conflict roles.

Table 8. **The Effects of Actors' and Partners' Felt-Loved on Actors' Destructive Behavior within Couples' Conflict Discussions (Study 4)**

| | Actors' Destructive Behavior | | | | | |
| | | | 95% CI | | | |
Predictors	B	t	Low	High	p	r
Intercept	1.79	42.14	1.708	1.876	<.001	.91
Actors' Felt-Loved	-.17	-7.36	-.220	-.127	<.001	.27
Partners' Felt-Loved	-.16	-6.90	-.209	-.116	<.001	.25
Actors' × Partners' Felt-Loved	**.05**	**2.58**	**.012**	**.093**	**.010**	**.14**
Conflict Role	-.10	-3.60	-.150	-.044	<.001	.19
Actors' Felt-Loved × Conflict Role	-.01	-.38	-.068	.046	.702	.02
Partners' Felt-Loved × Conflict Role	.03	1.17	-.023	.091	.242	.06
Actors' × Partners' Felt-Loved × Conflict Role	.02	1.38	-.008	.043	.169	.07

Note. Conflict Role is coded as -1 = agent desiring change and 1 = target being asked to change. The significant actors' × partners' felt-loved interaction effect shown in bold is presented in Figure 6. CI = confidence interval. Effect sizes (r) were computed using Rosenthal and Rosnow's (2007) formula: $r = \sqrt{t^2 / t^2 + df}$. In these multilevel models, the Satterthwaite approximation is applied to provide specific degrees of freedom for each effect, which were used to calculate the effect sizes.

As shown in Figure 6, a *Strong-Link/Mutual Felt-Unloved* pattern was evident. Actors' lower felt-loved predicted greater destructive behavior, but this actor effect was stronger when partners also experienced lower felt-loved (solid line; $b = -.25$, $t = -7.41$, $p <$

.001, $r = .37$) than when partners' felt-loved was high (dashed line; $b = -.10$, $t = -2.49$, $p = .013$, $r = .13$). Accordingly, actors who felt less loved showed greater destructive behavior when partners' felt-loved was low compared to when partners' felt-loved was high (left side of figure; $b = -.24$, $t = -7.08$, $p < .001$, $r = .35$), and this difference in actors' destructive behavior across levels of partners' felt-loved was greater than when actors experienced high felt-loved (right side of figure; $b = -.09$, $t = -2.21$, $p = .028$, $r = .12$). This dyadic pattern provides further evidence that partners' high felt-loved can buffer the effect of actors feeling unloved on destructive behavior (*strong link*), such that higher actors' destructive behavior occurs when both actors *and* partners feel unloved (*mutual felt-unloved*).
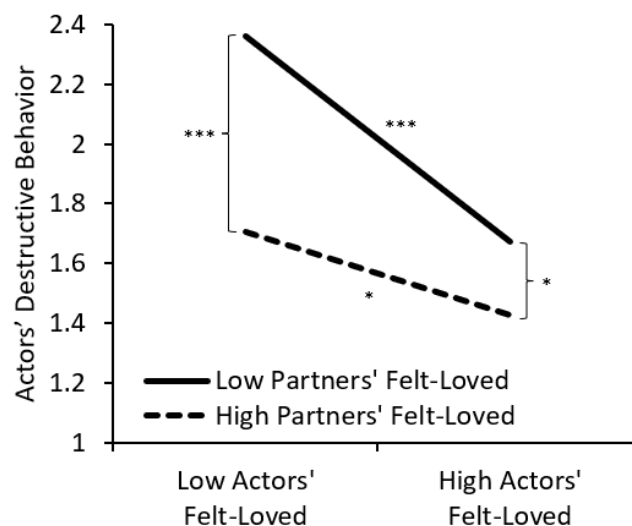

Figure 6. The effects of Actors' and Partners' Felt-Loved on Actors' Destructive Behavior within Couples' Conflict Discussions (Study 4).

Note. Low and high levels of Actors' and Partners' Felt-Loved represent 1 *SD* below and above the mean. The simple effects of the slopes and contrasts are marked $^*p < .05$ and $^{***}p < .001$.

Secondary Analyses: Role of Partners' Behavior

As in the prior studies, secondary analyses illustrated that partners' loving behavior did not account for the strong-link effect of partners' high felt-loved. Partners' higher felt-loved predicted greater partners' loving behavior ($b = .22$, $t = 10.57$, $p < .001$, $r = .40$; regardless of conflict roles: $b = .02$, $t = .90$, $p = .368$, $r = .04$), but actors' felt-loved ×

partners' loving behavior did not significantly interact to predict actors' destructive behavior ($b = -.03$, $t = -1.19$, $p = .236$, $r = .05$; regardless of conflict roles: $b = -.01$, $t = -.49$, $p = .621$, $r = .03$). The actors' × partners' felt-loved interaction shown in Figure 6 remained significant ($b = .08$, $t = 3.16$, $p = .002$, $r = .18$) when simultaneously modeling the effects of actors' felt-loved × partners' loving behavior.[8]

Additional Analyses

Chronic Feelings of Being Unloved. There were no significant interactions between actors' × partners' attachment anxiety or actors × partners' self-esteem on actors' destructive behavior, and controlling for these indicators of actors' and partners' chronic felt-(un)loved did not alter the actors' × partners' felt-loved interaction (see OSM).

Spillover Effects Across Interactions. We tested whether the effects occurred in our theorized causal direction by modeling the degree to which actors' felt-loved, partners' felt-loved, and actors' × partners' felt-loved in the first conflict discussion predicted actors' destructive behavior in the second conflict discussion, controlling for actors' destructive behavior in the first conflict discussion (Kenny et al., 2006). As shown in the top of Table 9, actors' × partners' felt-loved in the first conflict discussion significantly predicted actors' destructive behavior in the second conflict discussion which replicated the *Strong-Link/Mutual Felt-Unloved* pattern. As shown in Figure 7, actors' lower felt-loved predicted greater destructive behavior in the subsequent conflict discussion when partners also experienced low felt-loved (solid line; $b = -.10$, $t = -2.71$, $p = .008$, $r = .20$), but not when

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[8] Similarly, partners' higher felt-loved predicted lower partners' *destructive* behavior ($b = -.21$, $t = -8.66$, $p < .001$, $r = .31$; regardless of conflict roles: $b = -.02$, $t = -.83$, $p = .407$, $r = .04$), but actors' felt-loved × partners' destructive behavior did not significantly interact to predict actors' destructive behavior ($b = -.00$, $t = -.21$, $p = .837$, $r = .01$; regardless of conflict roles: $b = .01$, $t = .26$, $p = .794$, $r = .01$). However, the actors' × partners' felt-loved interaction became weaker ($b = .03$, $t = 1.81$, $p = .071$, $r = .07$) when simultaneously modelling the effects of actors' felt-loved × partners' destructive behavior. Given that partners' lower destructive behavior did not have the same buffering effect as partners' high felt-loved, partners' destructive behavior could not have explained the strong-link pattern, and the reduction in the actor × partner felt-loved interaction (which did not occur in any other study) was likely due to the shared variance across actors' and partners' destructive behavior.

partners experienced high felt-loved (dashed line; $b = .05$, $t = 1.12$, $p = .267$, $r = .09$).[9]

Table 9. **Tests of Spillover Effects of Actors' and Partners' Felt-Loved on Actors' Subsequent Destructive Behavior across Couples' Conflict Discussions (Study 4)**

| | Subsequent Outcome in Conflict Discussion | | | | | |
| | | | 95% CI | | | |
Predictors	B	t	Low	High	p	r
Theorized Spillover Effects: Predicting Actors' Subsequent Destructive Behavior						
Intercept	1.81	46.91	1.730	1.882	<.001	.96
Actors' Destructive Behavior	.68	17.81	.604	.754	<.001	.70
Actors' Felt-Loved	-.03	-.99	-.080	.026	.323	.05
Partners' Felt-Loved	-.02	-.92	-.078	.028	.356	.05
Actors' × Partners' Felt-Loved	**.06**	**2.57**	**.013**	**.097**	**.011**	**.19**
Reverse Spillover Effects: Predicting Partners' Subsequent Felt-Loved						
Intercept	5.15	96.33	5.041	5.251	<.001	.99
Partners' Felt-Loved	.79	21.60	.722	.867	<.001	.76
Actors' Felt-Loved	.13	3.46	.055	.200	.001	.19
Actors' Destructive Behavior	-.07	-1.17	-.177	.045	.244	.06
Actors' Felt-Loved × Destructive Behavior	.02	.60	-.044	.084	.548	.04

Note. The significant actors' × partners' felt-loved interaction effect presented in bold is presented in Figure 7. CI = confidence interval. Effect sizes (r) were computed using Rosenthal and Rosnow's (2007) formula: $r = \sqrt{(t^2 / t^2 + df)}$. In these multilevel models, the Satterthwaite approximation is applied to provide specific degrees of freedom for each effect, which were used to calculate the effect sizes.

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[9] Unlike the other studies, in Study 4 we had repeated assessment of felt-loved and destructive behavior within each 30-second segment of each conflict discussion. This provided an alternative way to examine evidence of directional effects by examining whether within-person variations in actors' × partners' felt-loved in one 30-second segment predicted actors' destructive behavior in the next 30-second segment, controlling for average levels of actors' × partners' felt-loved across the interaction as depicted in Figure 6 (see OSM). There were no within-person carryover effects from one segment to the next. Nonetheless, average levels of actors' × partners' felt-loved across the interaction continued to predict actors' destructive behavior in these models. Thus, the processes associated with the dyadic strong-link pattern may emerge across the course of an interaction rather than uniformly occurring across each connected 30-second segments within the interaction in the same way across couples (see OSM for more details). We consider these processes in the General Discussion.
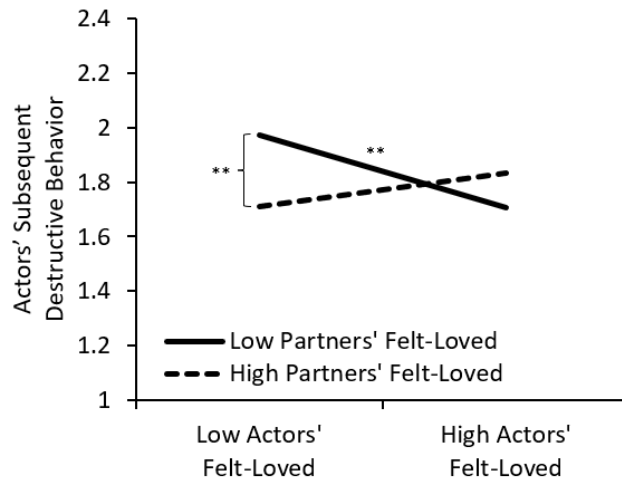
Figure 7. The Spillover effects of Actors' and Partners' Felt-Loved on Actors'
Subsequent Destructive Behavior across Couples' Conflict Discussions (Study 4).

Note. Low and high levels of Actors' and Partners' Felt-Loved represent 1 *SD* below and above the mean. The simple effects of the slopes and contrasts are marked [**]$p < .01$.

We then tested whether the effects might have occurred in the alternative causal direction by modeling the degree to which actors' felt-loved × actors' destructive behavior in the first conflict discussion predicted partners' felt-loved in the second conflict discussion. The actors' felt-loved × actors' destructive behavior interaction predicting partners' felt-loved in the subsequent conflict discussion was not significant (see bottom of Table 9). These results provide evidence that actors' and partners' felt-loved combine to shape actors' subsequent destructive behavior (rather than actors' felt-loved and destructive behavior predicting partners' subsequent felt-loved), supporting our theorizing that partners' high felt-loved can alleviate the destructive behavior arising from actors' low felt-loved.[10]

Study 5

Study 4 replicated the *Strong-Link/Mutual Felt-Unloved* pattern of actors' × partners' felt-loved on actors' destructive behavior within couples' conflict discussions, and again

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[10] We also examined whether partners' loving or destructive behavior was a mechanism for the strong-link spillover effects of partners' felt-loved. There were no significant interactions between actors' felt-loved × partners' loving behavior ($b = .05$, $t = 1.67$, $p = .096$, $r = .09$) or actors' felt-loved × partners' destructive behavior ($b = .01$, $t = .22$, $p = .828$, $r = .01$) predicting actors' subsequent destructive behavior. Thus, unlike partners' felt-loved, partners' loving or destructive behavior did not carry over to mitigate actors' subsequent destructive behavior arising from actors' low felt-loved.

found no evidence that partners' loving behavior accounted for the strong-link effect of partners' high felt-loved. In addition, unlike in Study 3, which found no evidence of spillover effects from couples' conflict to family interactions, Study 4 provided evidence for spillover effects in our theorized causal direction when the subsequent interaction involved a more specific challenging couple context (couples' conflict), and found no support for spillover effects in the alternative causal direction. In Study 5, we assessed couples' felt-loved and destructive behavior in four sequential interactions: (1) conflict discussion, (2) discussion of relationship strengths, (3) conflict discussion, and (4) family activity involving couples working together with their 4-5 year old child. These interactions capture diagnostic situations because they require couples to (1) navigate conflicting preferences, (2) connect, identify, and reciprocate positive aspects of their relationship, and (3) cooperate and support each other's parenting.

We aimed to replicate the *Strong-Link/Mutual Felt-Unloved* pattern of felt-loved across these four interactions. Additionally, the four sequential interactions allowed for stronger tests of directional effects by disambiguating within-person change across interactions from between-person differences that persist across interactions. Based on the results of spillover effects in Studies 3 and 4, within-person spillover effects might be more evident when the subsequent interaction involves a more challenging conflictual context (subsequent couples' conflict discussion) rather than a broader, less inherently conflictual interaction (subsequent couples' discussion of relationship strengths or family activity). Couples were video recorded engaging in the four sequential interactions. Immediately after each interaction, each participant reported how much they felt loved by their partner during that interaction. Independent coders rated how much each person exhibited destructive and loving behavior within each interaction (see Table 2).

Method

Participants

The sample included 285 mixed-gender couples and their 4-5-year-old child. Families were recruited via advertisements posted around community boards, early childhood centers, on Facebook, and at annual parenting events in New Zealand. Couples were married (84%) or cohabiting (16%), with an average relationship length of 11.70 years ($SD = 4.36$). The average age was 37.11 years ($SD = 5.24$, range = 23-55). Each family was reimbursed NZD$180 for completing a 3-hour lab-based session. This study received ethics approval. Study 5 was finalized after the initial analyses and submission of the present aims. The sample (285 couples) and number of interactions (4) far exceeded the prior studies. As is evident next, Study 5 has the power to detect the effect sizes of Study 3 and 4. However, because the design differed and we could not estimate the effect sizes of any differences across the different types of interactions, we report power to sensitively detect the effect sizes that emerged in Study 5. Monte Carlo simulations (1,000 repetitions) using estimates from the primary analyses revealed power of 1.00 to detect the actor, partner, and actor × partner and .90 to detect differences in actor × partner effects across couples' conflict discussions vs. non-conflict interactions (couples' discussion of relationship strengths, family activity).

Materials and Procedure

During a laboratory session, parents completed questionnaires and engaged in video-recorded discussions while their children participated in a series of tasks (unrelated to this study) in a separate room. Parents independently identified and ranked in importance their three most serious relationship conflicts that involved one partner (agent) wanting to produce change (target) in the other. Following a warm-up discussion, couples engaged in four sequential interactions: (1) a 7-minute discussion about the top-ranked problem identified by one partner, (2) a 5-minute discussion about areas of strengths in their relationship, (3) a 7-

minute discussion about the top-ranked problem identified by the other partner, and (4) a 10-minute family activity with their child involving building a tower out of paper-based materials as in Study 3.[11] The order of the conflict discussions (women agent-man target, man agent-women target) was counterbalanced across gender. Immediately following each of the four interactions, parents completed assessments of how much they felt loved by their partner during the interaction. Independent coders rated the degree to which each parent exhibited destructive and loving behavior during each interaction.

Questionnaire Measures.

Attachment Anxiety. Participants completed the same scale used in Studies 1-4 to assess attachment anxiety ($M = 2.77$, $SD = 1.05$, $\alpha = .80$). We did not assess self-esteem.

Felt-Loved Measures Across all Interactions.

Immediately following each interaction, participants rated two items to assess how much they felt loved during each discussion similar to prior studies ("I felt cared for/loved by my partner"; "I felt understood/validated by my partner"; αs > .72; see Tables 2 and 3). We included only two items because we designed the post-interaction assessments to be short and quick to complete in order to limit the time between interactions to assess spillover effects.

Behavioral Measures During Couples' Conflict and Relationship Strength Discussions.

Destructive Behavior. Following the coding protocols during conflict discussions in Studies 3 and 4, two to three trained coders independently rated how much each participant exhibited destructive behavior during each 30-second segment of each discussion (1 = *low*, 7 = *high*). Each couple member was coded in separate viewings (order counterbalanced).

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[11] All couples provided usable observational data for all three couple discussions. However, 13 parents were not able to be coded in the final family activity because parents did not speak English in the activity with their child (6 families) or because one parent was not visible during the family interaction (1 family). Multilevel modeling effectively accounts for missing data in one of the interactions and so the analyses were based on the total 1,134 observed interactions across the sample.

Coders' ratings were averaged for each 30-second segment (average ICCs > .90), and then averaged across each discussion to create destructive behavior scores (see Table 3).

     Loving Behavior. Following the coding protocols during conflict discussions in Study 4, the same team of coders also independently rated how much each person exhibited loving behavior during each 30-second segment of each discussion (1 = *low*, 7 = *high*). Coders' ratings were averaged for each 30-second segment (average ICCs > .87), and then averaged across each discussion to assess loving behavior (see Table 3).

     Behavioral Measures During Family Activity.

     Destructive Behavior. Following the coding protocols of parents' behaviors during the family activity in Study 3, a different team of three trained coders independently rated how much each parent exhibited destructive behavior toward their partner during the family activity (1 = *low*, 7 = *high*). Coders' ratings were reliable (ICC = .82) and averaged to create an overall score of each parent's destructive behavior toward their partner (see Table 3).

     Loving Behavior. Following the coding protocols of parents' behaviors during the family activity in Study 3, the same team of coders who rated each parent's destructive behavior during the family activity also independently rated how much each parent exhibited loving behavior toward their partner during the family activity. Coders' ratings were reliable (ICC = .77) and averaged to assess loving behavior (see Table 3).

  Results

     The correlations between actors' and partners' felt-loved during the two conflict discussions were similar to Studies 1-4 (r = .54 and .50), and the correlations between actors' and partners' felt-loved during the relationship strengths discussion (r = .45) and family activity (r = .21) were weaker. The size of these correlations, and inspection of the scatterplots (see OSM), indicate a fair representation of couples experiencing relatively similar or different levels of felt-loved.

Primary Analyses: Dyadic Effects of Feeling Loved on Destructive Behavior

We nested felt-loved and destructive behavior within the four interactions to account for dependence across the two interactions (see https://osf.io/m4jnd/?view_only=d916b0f8f5 d8462e93ff24f297263158 for data and syntax to replicate these analyses). We applied repeated-measures dyadic regression procedures (Kenny et al., 2006) to model the degree to which actors' felt-loved, partners' felt-loved, and actors' × partners' felt-loved predicted actors' destructive behavior, and included the main and interaction effects of whether the type of interaction represented a conflict or non-conflict context (conflict interaction = -1; non-conflict interaction = 1) to test whether the effects differed across the two types of interaction. Predictor variables were grand-mean centered. As shown in Table 10, the actors' × partners' felt-loved interaction on destructive behavior was significant (shown in bold). This effect did not differ across conflict and non-conflict interactions (see actors' felt-loved × partners' felt-loved × interaction type effect), providing support that the effects replicated within both types of interactions.

Table 10. **The Effects of Actors' and Partners' Felt-Loved on Actors' Destructive Behavior within Four Couple and Family Interactions (Study 5)**

| | Actors' Destructive Behavior | | | | | |
| | | | 95% CI | | | |
Predictors	B	t	Low	High	p	r
Intercept	1.44	44.53	1.377	1.504	<.001	.93
Actors' Felt-Loved	-.12	-9.13	-.150	-.097	<.001	.19
Partners' Felt-Loved	-.09	-6.43	-.113	-.060	<.001	.14
Actors' × Partners' Felt-Loved	**.05**	**5.41**	**.029**	**.063**	**<.001**	**.16**
Interaction Type	-.09	-5.56	-.123	-.059	<.001	.19
Actors' Felt-Loved × Interaction Type	.02	2.24	.003	.044	.025	.05
Partners' Felt-Loved × Interaction Type	.01	.79	-.012	.028	.432	.02
Actors' × Partners' Felt-Loved × Interaction Type	.01	1.01	-.007	.022	.314	.03

Note. Interaction Type = type of interaction (conflict interaction = -1; non-conflict interaction = 1). The significant actors' × partners' felt-loved interaction effect shown in bold is presented in Figure 8. CI = confidence interval. Effect sizes (r) were computed using Rosenthal and Rosnow's (2007) formula: $r = \sqrt{(t^2 / t^2 + df)}$. In these multilevel models, the Satterthwaite approximation is applied to provide specific degrees of freedom for each effect, which were used to calculate the effect sizes.
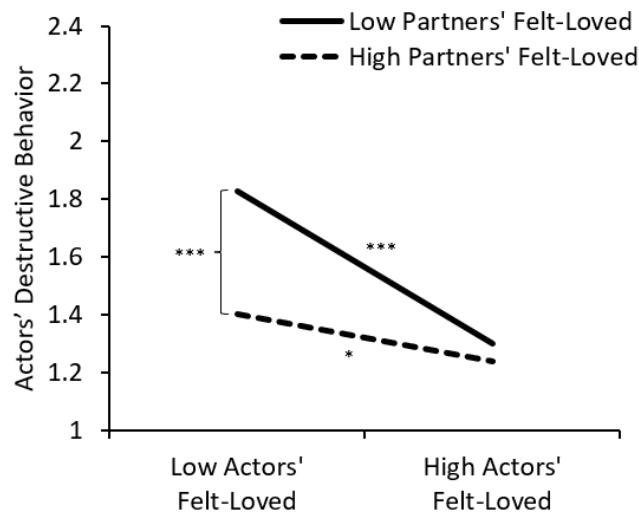
Figure 8. The effects of Actors' and Partners' Felt-Loved on Actors' Destructive Behavior within Four Sequential Couple and Family Interactions (Study 5).

Note. Low and high levels of Actors' and Partners' Felt-Loved represent 1 *SD* below and above the mean. The simple effects of the slopes and contrasts are marked *p < .05 and ***p < .001.

As shown in Figure 8, a *Strong-Link/Mutual Felt-Unloved* pattern was evident. Actors' lower felt-loved predicted greater destructive behavior, but this actor effect was stronger when partners also experienced lower felt-loved (solid line; $b = -.19$, $t = -11.83$, $p < .001$, $r = .34$) than when partners' felt-loved was high (dashed line; $b = -.06$, $t = 2.92$, $p = .004$, $r = .09$). Accordingly, actors whose felt-loved was low showed greater destructive behavior when partners' felt-loved was low compared to when partners' felt-loved was high (left side of figure; $b = -.15$, $t = -9.60$, $p < .001$, $r = .28$). Actors whose felt-loved was high showed similarly low levels of destructive behavior across levels of partners' felt-loved (right side of figure; $b = -.02$, $t = -1.09$, $p = .278$, $r = .03$). This dyadic pattern provides further evidence that partners' high felt-loved can buffer the effect of actors feeling unloved on destructive behavior (*strong link*), such that higher actors' destructive behavior occurs when both actors *and* partners feel unloved (*mutual felt-unloved*).

Secondary Analyses: Role of Partners' Behavior

Partners' felt-loved predicted greater partners' loving behavior ($b = .12$, $t = 8.70$, $p < .001$, $r = .19$), although this effect was stronger in non-conflict ($b = .14$, $t = 7.94$, $p < .001$, $r =$

.18) than conflict ($b = .09$, $t = 5.50$, $p < .001$, $r = .13$) interactions (difference across type of interactions: $b = .02$, $t = 2.21$, $p = .028$, $r = .05$). Additionally, a significant interaction between actors' felt-loved × partners' loving behavior ($b = .04$, $t = 2.96$, $p = .003$, $r = .07$) that did not differ across conflict and non-conflict interactions ($b = -.00$, $t = -.25$, $p = .805$, $r = .01$) replicated the *Strong-Link/Mutual Felt-Unloved* pattern. Actors' lower felt-loved predicted greater destructive behavior when partners enacted lower ($b = -.17$, $t = -10.22$, $p < .001$, $r = .22$), but not when partners enacted greater ($b = -.10$, $t = -4.89$, $p < .001$, $r = .11$), loving behavior. However, when modelling all actor and partner effects to simultaneously test actors' × partners' felt-loved and actors' felt-loved × partners' loving behavior, the actors' × partners' felt-loved interaction shown in Figure 8 remained significant ($b = .04$, $t = 4.84$, $p < .001$, $r = .15$), whereas the actors' felt-loved × partners' loving behavior interaction did not ($b = .02$, $t = 1.49$, $p = .138$, $r = .03$). Thus, partners' loving behavior did not explain the strong-link effect of partners' felt-loved.[12]

Additional Analyses.

   Chronic Feelings of Being Unloved. The interaction effect of actors' × partners' attachment anxiety on destructive behavior was not significant, and controlling for the main and interaction effects of actors' and partners' attachment anxiety did not reduce the significance of the actors' × partners' felt-loved interaction (see OSM).

   Spillover Effects Across Interactions. Gathering repeated assessments of felt-loved and destructive behavior across three or more sequential interactions allowed us to

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[12] As detailed in the OSM, partners' felt-loved also predicted lower partners' *destructive* behavior, although this effect was stronger in conflict than non-conflict interactions. Moreover, a significant interaction emerged between actors' felt-loved × partners' destructive behavior, but this interaction effect differed across conflict and non-conflict interactions. Decomposing this 3-way interaction revealed a *Strong-Link/Mutual Felt-Unloved* pattern in non-conflict but not in conflict interactions. Nonetheless, when modelling all actor and partner effects to simultaneously test actors' × partners' felt-loved and actors' felt-loved × partners' destructive behavior, the actors' × partners' felt-loved interaction remained significant and did not differ across conflict interactions, and the actors' felt-loved × partners' destructive behavior × interaction type also remained significant. Mediated moderation analyses using the RMediation Package (Tofighi & MacKinnon, 2011) supported that, at least within non-conflict interactions, partners' lower destructive behavior may partially contribute to the strong-link effect of partners' felt-loved.

disambiguate *within-person* change across interactions from *between-person* differences that persist across interactions, which provides a stronger test to examine evidence of directional effects. *Between-person* effects in this context assess the effects of average levels of felt-loved across all interactions. Given that these between-person effects describe couples' situational experiences within a series of sequential interactions, the between-person actors' × partners' felt-loved interaction is comparable to, and should replicate, the dyadic pattern shown in the primary analyses and in prior studies. More importantly, to examine evidence of directional effects, *within-person* spillover effects assess variations within individuals from a prior interaction to a subsequent interaction. To test whether the effects occurred in our theorized causal direction, we modeled the degree to which actors' felt-loved, partners' felt-loved, and actors' × partners' felt-loved in one interaction predicted actors' destructive behavior in a subsequent interaction, while controlling for actors' destructive behavior in the prior interaction. We included the main and interaction effects of whether the interaction involved couples' conflict and thus spilled over to a non-conflict interaction (i.e., couples' first conflict discussion to discussion of relationship strengths, and couples' second conflict discussion to family activity) or whether the interaction involved a non-conflict interaction and thus spilled over into couples' conflict discussions (i.e., couples' discussion of relationship strengths to couples' second conflict discussion). The between-person predictor variables (averages of actors' and partners' felt-loved across interactions) were grand-mean centered, and the within-person predictor variables (actors' and partners' felt-loved within each interaction) were person-mean centered (Bolger & Laurenceau, 2013; see https://osf.io/m4jnd/?view_only=d916b0f8f5d8462e93ff24f297263158 for data and syntax to replicate these analyses).

**Table 11. Tests of Spillover Effects of Actors' and Partners' Felt-Loved on Actors'
Subsequent Destructive Behavior across Four Sequential Couple and Family
Interactions (Study 5)**

			Actors' Subsequent Destructive Behavior			
			95% CI			
Predictors	*B*	*t*	Low	High	*p*	*r*
Intercept	1.39	36.34	1.318	1.469	<.001	.86
Interaction Type	.06	2.04	.002	.115	.042	.08
Between-Person Level						
Actors' Felt-Loved	-.16	-6.76	-.212	-.116	<.001	.26
Partners' Felt-Loved	-.06	-2.33	-.103	-.009	.020	.10
Actors' × Partners' Felt-Loved	**.06**	**2.58**	**.013**	**.098**	**.010**	**.14**
Actors' Felt-Loved × Interaction Type	-.03	-1.90	-.063	.001	.058	.06
Partners' Felt-Loved × Interaction Type	.01	.69	-.020	.041	.490	.02
Actors' × Partners' Felt-Loved × Interaction Type	-.00	-.01	-.028	.028	.992	.00
Within-Person Level						
Actors' Destructive Behavior	-.55	-14.06	-.625	-.472	<.001	.36
Actors' Felt-Loved	-.10	-3.35	-.153	-.040	.001	.09
Partners' Felt-Loved	-.08	-2.80	-.130	-.023	.005	.09
Actors' × Partners' Felt-Loved	**.12**	**3.77**	**.057**	**.182**	**<.001**	**.13**
Actors' Felt-Loved × Interaction Type	-.11	-3.57	-.167	-.049	<.001	.10
Partners' Felt-Loved × Interaction Type	-.03	-1.08	-.087	.025	.282	.03
Actors' × Partners' Felt-Loved × Interaction Type	**.11**	**3.75**	**.055**	**.175**	**<.001**	**.14**

Note. Interaction Type = type of interaction (conflict interaction and thus spilled over into non-conflict
interaction = -1; non-conflict interaction and thus spilled over into conflict interaction = 1). The significant
within-person actors' × partners' felt-loved interaction effect shown in bold is presented in Figure 9. CI =
confidence interval. Effect sizes (*r*) were computed using Rosenthal and Rosnow's (2007) formula: $r = \sqrt{t^2 / t^2 + df}$). In these multilevel models, the Satterthwaite approximation is applied to provide specific degrees of
freedom for each effect, which were used to calculate the effect sizes.

As shown in the top of Table 11, the *between-person* actors' × partners' felt-loved
interaction was significant and replicated the *Strong-Link/Mutual Felt-Unloved* pattern shown
in the primary analyses (see Figure 8) and in prior studies. Actors' lower felt-loved across
interactions predicted greater destructive behavior, but this effect was stronger when partners
also experienced lower felt-loved across interactions (*b* = -.23, *t* = -7.74, *p* < .001, *r* = .40)
than when partners' felt-loved across interactions was high (*b* = -.10, *t* = -2.64, *p* = .009, *r* =
.15). Thus, across a series of sequential interactions, partners with higher average levels of

felt-loved can buffer the damaging effect of actors' lower average levels of felt-loved on destructive behavior.

More critically, as shown in the bottom of Table 11, the *within-person* actors' × partners' felt-loved interaction on actors' subsequent destructive behavior was significant, but this spillover effect differed depending on whether the subsequent interaction involved a conflict or non-conflict interaction context. As shown in Figure 9, decomposing this three-way interaction revealed a *Strong-Link/Mutual Felt-Unloved* pattern when the effects spilled over into conflict interactions but not into non-conflict interactions. When the subsequent interaction involved a conflict interaction, actors' lower felt-loved predicted greater subsequent destructive behavior when partners also experienced lower felt-loved (solid line; $b = -.40$, $t = -4.56$, $p < .001$, $r = .15$), but not when partners' felt-loved was high (dashed line; $b = -.00$, $t = -.08$, $p = .937$, $r = .00$). By contrast, when the subsequent interaction involved a non-conflict interaction, actors' lower felt-loved was not associated with subsequent destructive behavior, regardless of whether partners experienced low felt-loved (solid line; $b = .01$, $t = .23$, $p = .820$, $r = .01$) or high felt-loved (dashed line; $b = .02$, $t = .37$, $p = .712$, $r = .01$). We also tested whether the effect might have occurred in the alternative causal direction by testing whether actors' felt-loved × actors' destructive behavior predicted partners' felt-loved in a subsequent interaction, but this model did not converge.[13]

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[13] Finally, we tested whether partners' loving or destructive behavior explained the strong-link within-person spillover effect of partners' high felt-loved (see OSM). The within-person actors' felt-loved × partners' loving behavior interaction on actors' subsequent destructive behavior was not significant, regardless of interaction context. However, the within-person actors' felt-loved × partners' destructive behavior interaction predicting actors' subsequent destructive behavior was significant, and like the strong-link spillover effect of partners' felt-loved, differed depending on interaction context. Decomposing this three-way interaction revealed a *Strong-Link/Mutual Felt-Unloved* pattern when the effects spilled over into conflict interactions but not into non-conflict interactions. Nonetheless, when modelling all actor and partner effects to simultaneously test actors' × partners' felt-loved and actors' felt-loved × partners' destructive behavior, the within-person actors' × partners' felt-loved spillover effect shown in Figure 9 remained significant, whereas the within-person actors' felt-loved × partners' destructive spillover effect did not. Thus, partners' loving or destructive behavior did not explain the strong-link spillover effect of partners' felt-loved.
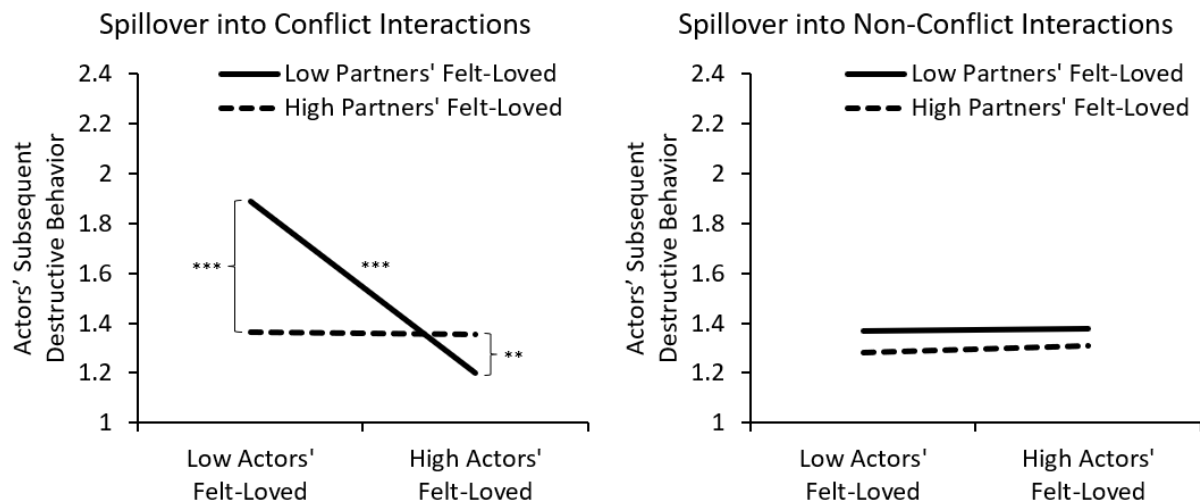
Figure 9. The Spillover effects of Actors' and Partners' Felt-Loved on Actors' Subsequent Destructive Behavior across Four Sequential Couple and Family Interactions (Study 5).

Note. Low and high levels of Actors' and Partners' Felt-Loved represent 1 *SD* below and above the mean. The simple effects of the slopes and contrasts are marked [**]$p < .01$ and [***]$p < .001$.

General Discussion

The present research challenges theoretical frameworks in relationship science to incorporate a dyadic approach to advance understanding of the nature and consequences of feeling loved. The findings illustrate that actors' and partners' feelings of being loved combine to determine important relationship behaviors. Five dyadic observational studies provided consistent evidence that a *Strong-Link/Mutual Felt-Unloved* dyadic pattern predicted whether actors behaved destructively during couples' relationship interactions. Partners' high felt-loved buffered the damaging effect of actors feeling unloved on destructive behavior (*strong link*), resulting in actors' destructive behavior most likely to occur when both actors and partners felt unloved (*mutual felt-unloved*). This dyadic pattern replicated in three supplemental daily sampling studies, and was not explained by partners' observed loving behavior or individual differences that capture actors' and partners' tendencies to feel (un)loved within relationships (attachment anxiety, self-esteem). Finally, providing some directional support for the *Strong-Link/Mutual Felt-Unloved* pattern, actors'

× partners' felt-loved in one interaction predicted actors' destructive behavior within couples' subsequent conflict interactions (Studies 4 and 5). In the following sections, we outline how the present findings offer novel insights about the dyadic nature of feeling loved, consider how adopting this dyadic perspective of love could be applied to advance understanding of many fundamental relationship processes, and highlight several important methodological and practical implications along with directions for future research.

Understanding Love Requires a Dyadic Approach: Weak-link versus Strong-link Patterns

The interdependent nature of close relationships means that fully understanding most *relationship* processes will require assessing how both partners feel, think, and behave toward each other (Kelley, 1979; Kelley & Thibaut, 1978). A dyadic perspective is, thus, crucial to fully understand how important interpersonal experiences, such as love and feeling loved, determine key relationship outcomes. Feeling loved is an essential need within relationships and the feelings we assessed—feeling loved, cared for, accepted, valued, and understood— are identified as principal drivers of behavioral dynamics that shape relationship outcomes (Murray et al., 2006; Simpson & Rholes, 2017; Reis, 2007, 2012). Yet, despite that the very nature of feeling loved involves relationship partners, prior theoretical and empirical treatments have primarily focused on how one person (*the actor*) feeling unloved can generate destructive behavior that has harmful implications for close relationships.

Our dyadic application to understanding the behavioral consequences of feeling (un)loved differentiated between two competing dyadic patterns. First, the few investigations applying interdependence principles to examine dyadic patterns have typically illustrated *weak-link* dyadic patterns: It only takes one person's lack of commitment (Attridge et al., 1995; Oriña et al., 2011), low gratitude (McNulty & Dugas, 2019), or suppression of emotions (Sasaki et al., 2021) to undermine relationship satisfaction and stability. Weak-link

effects likely occur because one dyad member cannot sustain relationships on their own; rather, actors and partners must both be committed, grateful, and express their emotions to co-operate in constructive ways and sustain relationships over time. Similarly, it may be difficult to maintain constructive interactions if only one person feels loved. Either person feeling unloved could act as a weak link by producing destructive behavioral dynamics in challenging interactions, resulting in the best outcomes emerging when actors and partners mutually feel loved (Clark et al., 2019; Murray & Holmes, 2009; Reis & Clark, 2014).

Second, however, alternative theoretical models suggest that *strong-link* patterns can emerge such that partners' higher felt-loved may compensate for actors' lower felt-loved and thus prevent harmful outcomes. For example, attachment-based models emphasize that partners' loving behavior (expression of affection, physical touch, reassurance, accommodation) can reduce the distress and destructive responses typically exhibited by actors high in attachment insecurity (Arriaga et al., 2018; Overall & Simpson, 2015; Simpson & Overall, 2014). Applications of interdependence theory similarly indicate that partners' accommodation can sidetrack reciprocal destructive behavior (Rusbult et al., 1991). In contrast, the worst outcomes may arise when actors and partners mutually feel unloved as supported by the poor outcomes arising when both actors and partners behave in destructive ways (Christensen & Heavey, 1990; Gottman, 1998).

The results across eight studies unequivocally supported a *Strong-Link/Mutual Felt-Unloved* dyadic pattern, which indicates that partners' high felt-loved buffered the damaging effect of actors feeling unloved on destructive behavior (*strong link*), resulting in actors' destructive behavior most likely to occur when both actors and partners felt unloved (*mutual felt-unloved*). Thus, feeling loved may not need to be mutual in order to alleviate problematic dynamics within relationship interactions (not a *Weak-Link/Mutual Felt-Loved* pattern), but rather partners feeling loved can buffer the effect of actors feeling unloved on destructive

behavior (*Strong-Link/Mutual Felt-Unloved* pattern). These robust dyadic effects illustrate that failing to adopt a dyadic approach may lead to erroneous conclusions or at minimum provide an incomplete picture of relationship phenomena. Even for well-established effects like that of actors feeling unloved promoting destructive behavior (Murray et al., 2006; Simpson & Rholes, 2017), a sole focus on actor effects may produce null or inconsistent effects because partners' feelings of being loved can buffer the effects of actors feeling unloved.

In addition to providing the first illustration that understanding the behavioral consequences of feeling (un)loved requires a dyadic approach, the results advance prior demonstrations of strong-link patterns in several ways. Prior studies have assessed how partners' behavior (or perceptions of partners' behavior) may act as a strong link by buffering the effects of actors' chronic insecurity on poor outcomes, such as distress, dissatisfaction, and destructive behavior. By contrast, the present studies illustrate that partners *feeling* loved can buffer the effects of actors *feeling* unloved within relationship interactions. Focusing on feelings of being loved is important because, regardless of how or why feelings of being (un)loved arises, actors' current feelings of being (un)loved is likely the strongest, most proximal predictor of their behavior within those interactions. To illustrate, these within-interaction feelings are theorized to be critical in explaining why chronic insecurity disrupts interaction dynamics (Murray et al., 2006; Simpson & Rholes, 2017). Accordingly, additional analyses demonstrated that the results were independent of attachment anxiety and low self-esteem and thus individual difference vulnerabilities in feeling (un)loved.

Furthermore, it is not just people high in attachment insecurity or low self-esteem that can feel unloved and behave in destructive ways, and thus our results have a wider scope for understanding the dynamics that emerge whenever feelings of beings unloved arise in relationship interactions. Indeed, many additional factors can give rise to actors feeling

(un)loved within interactions, such as partners' behavior or perceptions of partners' behavior (Lemay & Clark, 2008a; Reis et al., 2004). Yet, we extend prior research showing that observed or perceived partners' behavior can buffer insecure actors' negative outcomes by demonstrating the strong-link effect of partners' *feelings* of being loved, which additional analyses revealed was independent of partners' loving or destructive behavior. We didn't assess or analyse other factors that may contribute to feelings of being loved vs. unloved in the moment (e.g., stress, mood from prior social interactions, biased perceptions). Nonetheless, irrespective of the many reasons for why people may feel (un)loved in a given interaction, the current results highlight that actors' and partners' current *feelings* of being (un)loved combine to determine a critical relationship outcome: the degree to which actors' destructive behavior emerges in risky, challenging interactions.

Contrasting competing dyadic patterns not only advances understanding of the dyadic nature of felt-loved on destructive behavior, but also has implications for differentiating when a *Strong-Link/Mutual Unloved* versus *Weak-Link/Mutual Felt-Loved* may emerge. Comparing the present findings to prior research on dyadic patterns highlights that one important context for understanding which pattern may emerge is whether within-situation versus global processes are the focus of investigation. A *Strong-Link/Mutual Felt-Unloved* pattern may be most likely to occur when examining within-situation processes. The present studies provide supporting evidence that partners' high felt-loved *within* a given interaction may protect against actors' destructive behavior when actors feel unloved *within* that interaction. Similarly, prior research supporting a strong-link pattern has shown that partners' loving behavior can provide momentary reassurance that dissipates actors' chronic insecurities within threatening interactions (Arriaga et al., 2018; Overall & Simpson, 2015; Simpson & Overall, 2014), and partners who accommodate, instead of responding with negativity or withdrawal, can help to de-escalate actors' immediate destructive responses

(Christensen & Heavey, 1990; Gottman, 1998; Rusbult et al., 1991). Thus, if Pat continues to feel loved despite the risk of threatening interactions, Pat may be able to be a strong link by buffering the degree to which Alex's in-the-moment vulnerabilities lead to problematic dynamics *within* specific interactions.

Strong-Link/Mutual Felt-Unloved patterns within situations should have important implications for long-term relationship outcomes. Indeed, by undermining conflict resolution and closeness, negative reciprocity and demand-withdraw erode relationship quality across time (Christensen & Heavey, 1990; Gottman, 1998). In contrast, by helping couples better navigate specific relationship challenges, partners' loving behavior (or perceived loving behavior) builds trust, satisfaction, and commitment (Wieselquist et al., 1999), even in chronically insecure individuals (e.g., Park et al., 2019), thereby creating a mutual cyclical growth process that promotes relationships over time (Wieselquist et al., 1999; also see Overall et al., 2022). Similarly, in the present studies, the strong-link pattern of partners' felt-loved may have important long-term implications, such as promoting reciprocal feelings and expressions of love, thereby fostering relationship growth and well-being.

Nonetheless, if within-interaction dyadic patterns become chronic, such as when Pat has to manage Alex's persistent feelings of being unloved across interactions, the ability or benefits of Pat being a strong link may dissipate (Joiner, 1994). Strong-link partners like Pat may grow weary and resentful over time (Lemay & Dudley, 2011), producing a switch from protecting relationships within challenging interactions (strong link) to being unable to sustain long-term relationship wellbeing on one's own (weak link). Indeed, in contrast to the within-situation dynamics examined in the present studies, a *Weak-Link/Mutual Felt-Loved* pattern may be most likely to occur when examining chronic, ongoing processes predicting broader, long-term relationship outcomes. The initial conceptualization of weak-link patterns, for example, focused on the role of commitment in predicting long-term relationship stability

(Kelley & Thibault, 1978; Waller & Hill, 1951). In contrast to partners protecting relationships within specific interactions, one partner's higher commitment may have little power to keep a less committed partner to remain in the relationship in the long term (Attridge et al., 1995). Other weak-link patterns have focused on general feelings of low gratitude (McNulty & Dugas, 2019) and habitual emotional suppression (Sasaki et al., 2021) that likely reflect ongoing, chronic processes that chip away at global relationship quality. Similarly, models emphasizing the importance of mutual love and responsiveness (Clark et al., 2019; Murray & Holmes, 2009; Reis & Clark, 2014) may be most relevant to dynamics that persist across time.

In sum, although Pat's high felt-loved in a given interaction may act as a strong link by protecting against Alex's destructive behavior when Alex feels unloved within that interaction, Pat's felt-loved may be less able to compensate for Alex chronically feeling unloved undermining the relationship in the long term. Thus, relationships are likely to be most successful over time if both Alex and Pat generally feel loved, likely because both dyad members are more consistently responsive to each other in times of need. Integrating the present findings with our analysis of prior research, both dyad members may need to take turns to act as a strong link to sustain relationships in order to ensure that chronic differences in felt-loved do not create weak links that destabilize relationships over time. Future research examining both immediate and over-time dyadic patterns is needed to test our speculations.

Advances to the Understanding of Love: Measuring and Modeling Love in Context

Our theoretical and empirical analysis of felt-loved within relationship interactions offers clarification about what love and feeling loved likely involves. Despite that feeling loved is a fundamental need within close relationships, there is currently no consensually agreed upon definition or measurement of feeling loved. We integrated core components identified by scholarly and lay conceptualizations of love (e.g., Hatfield & Walster, 1978;

Fehr, 1988; Hendrick & Hendrick, 1986; Lee, 1977; Rubin, 1970; Sprecher and Fehr, 2005;

Sternberg, 1986) with feelings identified as pivotal across key relationship theories (see Table

1; Clark et al., 2019; Murray et al., 2006; Reis, 2007) to characterize feeling loved as

involving feeling cared for, accepted, valued, and understood. By identifying the feelings

common across models, our integration illuminates core elements of what feeling loved 'is'.

Our integrative approach also illustrates that feeling loved is central across seemingly

distinct theoretical models that use different language to assess the same principal feelings.

By identifying unified principles, the results are relevant and make advances to numerous

areas in relationship science. For example, the results emphasize that attachment, risk

regulation, and perceived partner responsiveness theories specify many of the same processes

and principles, and that these involve feelings that can be characterized as love given the

substantial overlap with scholarly and lay conceptualizations of love. Moreover, our results

show that a dyadic perspective is critical across all these areas. Models of love, as well as

attachment, risk regulation, and perceived partner responsiveness theories, need to extend a

primary focus on individuals' feelings of love or being loved because partners' feelings of

being loved (or high felt security, perceived regard, or perceived partner responsiveness) can

likely buffer the destructive outcomes associated with actors feeling unloved (or low felt

security, perceived regard, or perceived partner responsiveness).

Our integration of models of love that focus on general sentiments and motivations

with principal theories that emphasize within-situation feelings of being loved (see Table 1)

also illustrate the value of measuring and modeling love or feeling loved within interactions.

Although general feelings of love or being loved are important, current feelings play a key

role in determining whether couples can navigate challenging relationship interactions and, in

turn, likely sustain loving relationships more generally. Moreover, examining dynamics

within couples' interactions illustrated that (somewhat unexpectedly) partners' *feelings* of

being loved can play a more powerful role than partners' loving behavior. We had theorized that one reason for a strong-link effect of partners' felt-loved is that partners high in felt-loved may enact greater loving behavior (see Figure 2). However, although there was some evidence that partners' felt-loved predicted greater loving behavior, partners' loving behavior did not illustrate a robust strong-link effect across studies and did not account for the strong-link effect of partners' felt-loved.

Why might partners *feelings* of being loved have positive buffering effects that are not explained by partners' loving behavior? We think partners' felt-loved could prompt a range of pro-relationship processes that are tailored to actors' idiosyncratic needs within the specific context. Specific partner behaviors, such as loving and kind behavior, are not always beneficial and can even be harmful in certain contexts (McNulty & Fincham, 2012). Instead, there is growing evidence that the most effective partner behaviors are those that address the demands of the situation (McNulty, 2016). Accordingly, partners who feel loved may be more likely to express love when actors are highly distressed and need evidence of partners' commitment, but may convey their investment by expressing their own feelings (even negative feelings such as disappointment) and engaging in direct reasoning when actors want to resolve serious conflicts (Overall & McNulty, 2017; Overall, 2018). Partners who feel loved may also be more able to be responsive to actors' chronic love-related needs, including overt expressions of love for those who crave it versus autonomy-sensitive indirect expressions, such as giving space, for those who find closeness uncomfortable (Arriaga et al., 2018; Overall & Simpson, 2015). Moreover, because partners who feel loved can put aside their own concerns to be focused on actors' needs, whichever way they respond may be perceived as more supportive and authentic (Lemay & Clark, 2008a). Thus, partners who feel loved may act as a strong link not because they consistently exhibit a specific type of pro-

relationship response but because they can be other-focused and more effectively respond in ways that address actors' specific needs within the interaction.

Future research is required to test the idea that partners' felt-loved may create a safe relationship climate by facilitating responsive interactions that meet idiosyncratic contextually-relevant needs. Yet, even in the absence of a clear mechanism, the present findings suggest that partners' felt-loved may have the power to help actors who feel unloved overcome the tendency to behave destructively, particularly during challenging interactions. These initial findings provide valuable directions for future research to adopt a dyadic perspective to understand and measure processes related to love and feeling loved in contexts in which love-related dynamics are likely to be crucial.

Caveats, Limitations, and Future Directions

Our primary studies included examining felt-loved and observed behavior within 1,965 relationship interactions. This methodological focus has many strengths, including offering insight into naturally occurring dyadic processes across an array of contexts where feeling unloved and destructive behavior may emerge and have important relationship consequences. Yet, the correlational nature of the data precludes causal conclusions. Tests of spillover effects across sequential interactions provided some support for our theorized direction of effects. The negative effect of actors low felt-loved in one interaction on actors' destructive behavior in a subsequent interaction was buffered by partners' prior high felt-loved, but only when the subsequent interaction involved a conflict discussion (Studies 4 and 5) and not when the subsequent interaction may have been less challenging (e.g., discussion of relationship strengths, family activity; Studies 3 and 5) and thus destructive behavior is less likely to arise. Future research could provide stronger causal evidence by combining the strengths of examining dynamics within couples' interactions with experimental interventions that facilitate partners' felt-loved during challenging interactions. Future investigations also

may illustrate reciprocal causal processes. We did not find strong support for an alternative directional account: actors who felt unloved but were able to inhibit destructive behavior did not predict partners feeling more loved in subsequent interactions. It remains possible, however, that partners' high felt-loved mitigates the destructive behavior arising from actors' low felt-loved, and actors' lower destructive behavior despite actors feeling unloved, in turn, promotes partners' felt-loved, reinforcing the strong-link effect of partners' high felt-loved.

The dyadic effects of felt-loved also replicated within three supplemental daily sampling studies suggesting that the strong-link effect of partners' felt-loved will likely emerge within more routine interactions. However, the overall pattern of results across all analyses suggests that the strength and detection of this dyadic pattern will depend on the specificity and timing of measurements. For example, the daily assessments captured felt-loved and destructive behavior across a range of interactions rather than within specific risky interactions, and these less specific assessments likely account for why the dyadic effects were weaker than in the lab-based studies (see OSM). By contrast, isolating particular moments of interactions may be too narrow to reliably detect strong-link dyadic processes. For example, in Study 4, which involved repeated assessments of felt-loved and destructive behavior within each 30-segment of couples' conflict discussions, within-person variations in actors' × partners' felt-loved in one segment did not significantly predict actors' destructive behavior in the subsequent 30-second segment (see Footnote 9 and OSM). Taken together with the significant spillover effects across subsequent conflict discussions in Study 4 and Study 5, this pattern may indicate that dyadic strong-link patterns are most likely to emerge across the course of an interaction or series of interactions rather than uniformly occurring across discrete moments within specific interactions. Indeed, in some instances strong-link effects may be the result of consistent processes across the interaction, but in other instances strong-link effects may primarily be the result of pivotal moments that are idiosyncratic to

each interaction (e.g., softening the start of interactions, repairing particularly challenging moments, and/or ending the interaction in loving ways). Considering how strong-link effects emerge across couples' interactions is an important direction for future research.

Additional research is also needed to identify the processes through which partners are able to continue to feel loved across the course of an interaction and thus show a strong-link pattern. For example, even if actors feel unloved and behave in destructive ways, partners may be able to sustain feelings of being loved across relationship interactions by making more forgiving attributions and seeking information reaffirming their beliefs about actors' general love for them (Lemay & Clark, 2008a; Lemay et al., 2007). Rather than narrowly focusing on actors' behavior within the specific interaction as an indicator of actors' love, partners who are able to maintain felt-loved may also draw on knowledge of what makes them feel loved in their relationship more generally (Neff & Karney, 2005). Moreover, we theorized that partners' loving behavior did not explain the effects of partners' felt-loved because specific types of loving responses may not match actors' idiosyncratic contextually-relevant needs. Future examinations of the strengths that enable partners to sustain feelings of being loved despite actors feeling unloved, along with identifying how to capture the varied behavioral dynamics that likely underlie these buffering effects, will be valuable to isolate the mechanisms explaining the strong-link effect of partners' felt-loved.

Further questions to be addressed involve the contexts and outcomes in which strong-link (or weak-link effects) might occur. First, the strong-link pattern may not occur across all relationship settings. The present studies were collected across different countries (New Zealand, US, Canada, Netherlands) and involved couples in different types of relationships (dating couples, newlyweds, married couples with children). However, participants were on average relatively satisfied and committed and did not experience extreme drops in felt-loved even within challenging interactions. Couples who are distressed or facing chronic stressors

may exhibit heightened self-protective defenses and have fewer resources to attend to each other's needs and feelings, possibly reducing partners' ability to maintain feelings of being loved and the degree to which partners feeling loved can mitigate actors' destructive behavior. Instead, these couples may exhibit a weak-link pattern in which actors' heightened self-protective responses may be enough to derail any relationship-promotion efforts by their partner feeling loved. A weak-link pattern may also emerge when actors exhibit extreme forms of destructive behavior, such as violence and aggression, making it difficult (and unhealthy) for partners who feel loved to respond constructively.

Second, the strong-link pattern may not occur across different outcomes. We focused on actors' destructive behavior within risky interactions because destructive behavior is an important outcome that principal theories emphasize should emerge from feeling unloved (Murray et al., 2006; Reis & Clark, 2013; Simpson & Rholes, 2017). The strong-link pattern, however, did not extend to promoting actors' loving behavior within interactions (see Footnote 1), suggesting that although partners' high felt-loved can buffer the damaging effect of actors feeling unloved on destructive behavior, partners' high felt-loved is not enough to promote loving behavior among actors who feel unloved, at least within risky interactions where self-protective concerns are amplified. Similarly, partners' high felt-loved within specific interactions may not be enough to promote other actors' positive outcomes beyond the interaction, such as felt commitment, inclusion of the other in the self, and more general relationship-maintenance behaviors. These broader positive outcomes may require actors and partners to mutually and consistently feel loved across interactions, and either actors or partners persistently feeling unloved may be enough to act as a weak link. Exploring whether different dyadic patterns might emerge when examining negative vs. positive outcomes is an interesting avenue for future research.

Finally, the present findings and ensuing future directions are important because they

have consequential therapeutic implications. Relationship-based therapies often focus on alleviating individuals' feelings of being unloved in order to reduce self-protective, destructive behaviors (Johnson, 2004). Yet, the present results suggest that focusing on one's person's vulnerability and behavior overlooks the role of the other partner's feelings of being loved, which may act as a strong link to mitigate destructive behavior. Thus, it may be beneficial for both partners to attend to each other's feelings of being loved during important relationship interactions to recognize the potential for either partner to be a strong link. Therapists may also be able to help partners become strong links for each other by considering how feeling loved can be facilitated and expressed in the context of each person's specific needs and demands. Leveraging either partner's feelings of being loved will likely better equip couples to successfully navigate challenging relationship interactions in which feeling unloved and destructive behavior might arise.

Conclusion

Feeling loved is a fundamental and essential need within relationships that is central to determining how people respond during relationship interactions, and thus whether relationships survive and thrive. The present research represents the first investigation adopting a dyadic perspective to test how both actors' and partners' feelings of being loved or unloved combine to shape destructive behavior within relationship interactions. By integrating and differentiating between key theoretical and empirical work in relationship science, the results suggest that feeling loved does not need to be mutual within relationship interactions to prevent destructive behavior in challenging interactions. Instead, one partner feeling loved may act as a strong link by buffering the damaging effect of the other feeling unloved on destructive relationship dynamics within interactions. These dyadic effects highlight the dyadic nature and consequences of feeling loved. The need to assess dyadic combinations should be equally important for other important relationship phenomena.

References

Arriaga, X. B., Eller, J., Kumashiro, M., Rholes, W. S., & Simpson, J. A. (2020). Self-Efficacy and Declines Over Time in Attachment Anxiety During the Transition to Parenthood. *Social Psychological and Personality Science*, *12*(5), 658-666. https://doi.org/10.1177/1948550620933411

Arriaga, X. B., Kumashiro, M., Simpson, J. A., & Overall, N. C. (2018). Revising Working Models Across Time: Relationship Situations That Enhance Attachment Security. *Personality and Social Psychology Review*, *22*(1), 71–96. https://doi.org/10.1177/1088868317705257

Attridge, M., Berscheid, E., & Simpson, J. A. (1995). Predicting relationship stability from both partners versus one. *Journal of Personality and Social Psychology*, *69*(2), 254–268. https://doi.org/10.1037/0022-3514.69.2.254

Ayduk, O., Downey, G., Testa, A., Yen, Y., & Shoda, Y. (1999). Does rejection elicit hostility in high rejection sensitive women? *Social Cognition*, *17*(2), 245-271. https://doi.org/10.1521/soco.1999.17.2.245

Baumeister, R., & Leary, M. R. (1995). The need to belong: desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*(3), 497–529.

Bolger, N., & Laurenceau, J-P. (2013). *Intensive longitudinal methods: An introduction to diary and experience sampling research*. Guilford.

Cameron, L. D., & Overall, N. C. (2018). Suppression and expression as distinct emotion-regulation processes in daily interactions: Longitudinal and meta-analyses. *Emotion*, *18*(4), 465. https://doi.org/10.1037/emo0000334

Canevello, A., & Crocker, J. (2010). Creating good relationships: Responsiveness, relationship quality, and interpersonal goals. *Journal of Personality and Social Psychology*, *99*(1), 78–106. https://doi.org/10.1037/a0018186

Carnelley, K. B., & Rowe, A. C. (2007). Repeated priming of attachment security influences later views of self and relationships. *Personal Relationships*, *14*(2), 307–320. https://doi.org/10.1111/j.1475-6811.2007.00156.x

Cavallo, J. V., Murray, S. L., & Holmes, J. G. (2013). Regulating interpersonal risk. In J. A. Simpson & L. Campbell (Eds.), *Oxford handbook of close relationships* (pp. 116–136). Oxford University Press.

Christensen, A., & Heavey, C. L. (1990). Gender and social structure in the demand/withdraw pattern of marital conflict. *Journal of Personality and Social Psychology*, *59*(1), 73–81. https://doi.org/10.1037/0022-3514.59.1.73

Clark, M. S., Hirsch, J. L., & Monin, J. K. (2019). Love Conceptualized as Mutual Communal Responsiveness. In R. J. Sternberg & K. Sternberg (Eds.), *The New Psychology of Love* (2nd ed., pp. 84–116). Cambridge University Press. https://doi.org/10.1017/9781108658225.006

Cowan, P. A., & Cowan, C. P. (2002). Interventions as tests of family systems theories: Marital and family relationships in children's development and psychopathology. *Development and Psychopathology*, *14*(4), 731–759. https://doi.org/10.1017/S0954579402004054

Crasta, D., Rogge, R. D., Maniaci, M. R., & Reis, H. T. (2021). Toward an optimized measure of perceived partner responsiveness: Development and validation of the perceived responsiveness and insensitivity scale. *Psychological Assessment*, *33*(4), 338–355. https://doi.org/10.1037/pas0000986

Faure, R., Righetti, F., Seibel, M., & Hofmann, W. (2018). Speech Is Silver, Nonverbal

    Behavior Is Gold: How Implicit Partner Evaluations Affect Dyadic Interactions in

    Close Relationships. *Psychological Science*, *29*(11), 1731–1741.

    https://doi.org/10.1177/0956797618785899

Fehr, B. (1988). Prototype analysis of the concepts of love and commitment. *Journal of*

    Personality and Social Psychology, 55(4), 557–579. https://doi.org/10.1037/0022-

    3514.55.4.557

Fehr, B., & Russell, J. A. (1991). The concept of love viewed from a prototype perspective.

    Journal of personality and social psychology, *60*(3), 425.

    https://doi.org/10.1037/0022-3514.60.3.425

Fraley, R. C., & Shaver, P. R. (2000). Adult romantic attachment: Theoretical developments,

    emerging controversies, and unanswered questions. *Review of general psychology*,

    4(2), 132-154. https://doi.org/10.1037/1089-2680.4.2.132

Fredrickson, B. L. (2016). Love: Positivity resonance as a fresh, evidence-based perspective

    on an age-old topic. In L. F. Barrett, M. Lewis, & J. M. Haviland-Jones (Eds.),

    Handbook of emotions (pp. 847– 858). Guilford Press.

Gable, S. L., Gonzaga, G. C., & Strachman, A. (2006). Will you be there for me when things

    go right? Supportive responses to positive event disclosures. *Journal of Personality*

    and Social Psychology, *91*(5), 904–917. https://doi.org/10.1037/0022-3514.91.5.904

Gable, S. L., Gosnell, C. L., Maisel, N. C., & Strachman, A. (2012). Safely testing the alarm:

    close others' responses to personal positive events. Journal of personality and social

    psychology, 103(6), 963. https://doi.org/10.1037/a0029488

Gaucher, D., Wood, J. V., Stinson, D. A., Forest, A. L., Holmes, J. G., & Logel, C. (2012).

    Perceived regard explains self-esteem differences in expressivity. *Personality and*

Social Psychology Bulletin, *38*(9), 1144-1156.

https://doi.org/10.1177/0146167212445790

Gillath, O., Hart, J., Noftle, E. E., & Stockdale, G. D. (2009). Development and validation of a state adult attachment measure (SAAM). *Journal of Research in Personality*, *43*(3), 362-373. https://doi.org/10.1016/j.jrp.2008.12.009

Gottman, J. M. (1998). Psychology and the Study of Marital Processes. *Annual Review of Psychology*, *49*(1), 169–197. https://doi.org/10.1146/annurev.psych.49.1.169

Hatfield, E. & Walster, G. W. (1978). *A new look at love*. University Press of America.

Hendrick, C., & Hendrick, S. (1986). A theory and method of love. *Journal of Personality and Social Psychology*, *50*(2), 392–402. https://doi.org/10.1037/0022-3514.50.2.392

Jakubiak, B. K., & Feeney, B. C. (2016). A Sense of Security: Touch Promotes State Attachment Security. *Social Psychological and Personality Science*, *7*(7), 745–753. https://doi.org/10.1177/1948550616646427

Joiner, T. E. (1994). Contagious depression: Existence, specificity to depressed symptoms, and the role of reassurance seeking. *Journal of Personality and Social Psychology*, *67*(2), 287–296. https://doi.org/10.1037/0022-3514.67.2.287

Johnson, S. (2004). *The Practice of Emotionally Focused Couple Therapy* (1st/2nd ed.). Brunner-Routledge.

Jolink, T. A., Chang, Y.-P., & Algoe, S. B. (2021). Perceived Partner Responsiveness Forecasts Behavioral Intimacy as Measured by Affectionate Touch. *Personality and Social Psychology Bulletin*, Advance online publication. https://doi.org/10.1177/0146167221993349

Kanter, J. B., Lavner, J. A., Lannin, D. G., Hilgard, J., & Monk, J. K. (2022). Does couple communication predict later relationship quality and dissolution? A meta-analysis. *Journal of Marriage and Family*, *84*(2), 533-551. https://doi-org/10.1111/jomf.12804

Kelley, H. H. (1979). Personal Relationships: Their Structures and Processes. Erlbaum.

Kelley, H. H., & Thibaut, J. W. (1978). *Interpersonal Relations: A Theory of Interdependence*. John Wiley.

Kenny, D. A., Kashy, D. A., & Cook, W. L. (2006). *Dyadic data analysis*. Guilford.

Kim, K. J., Feeney, B. C., & Jakubiak, B. K. (2018). Touch reduces romantic jealousy in the anxiously attached. *Journal of Social and Personal Relationships*, *35*(7), 1019–1041. https://doi.org/10.1177/0265407517702012

Kohn, J. L., Rholes, S. W., Simpson, J. A., Martin III, A. M., Tran, S., & Wilson, C. L. (2012). Changes in marital satisfaction across the transition to parenthood: The role of adult attachment orientations. *Personality and Social Psychology Bulletin*, *38*(11), 1506-1522. https://doi.org/10.1177/0146167212454548

Laurenceau, J.-P., Barrett, L. F., & Pietromonaco, P. R. (1998). Intimacy as an interpersonal process: The importance of self-disclosure, partner disclosure, and perceived partner responsiveness in interpersonal exchanges. *Journal of Personality and Social Psychology*, *74*(5), 1238–1251. https://doi.org/10.1037/0022-3514.74.5.1238

Lee, J. A. (1977). A typology of styles of loving. *Personality and Social Psychology Bulletin*, *3*(2), 173–182. https://doi.org/10.1177/014616727700300204

Lemay, E. P., & Clark, M. S. (2008a). How the head liberates the heart: Projection of communal responsiveness guides relationship promotion. *Journal of Personality and Social Psychology*, *94*(4), 647–671. https://doi.org/10.1037/0022-3514.94.4.647

Lemay, E. P., & Clark, M. S. (2008b). "Walking on eggshells": How expressing relationship insecurities perpetuates them. *Journal of Personality and Social Psychology*, *95*(2), 420–441. https://doi.org/10.1037/0022-3514.95.2.420

Lemay, E. P., Clark, M. S., & Feeney, B. C. (2007). Projection of responsiveness to needs and the construction of satisfying communal relationships. *Journal of Personality and Social Psychology*, *92*(5), 834–853. https://doi.org/10.1037/0022-3514.92.5.834

Lemay, E. P., & Dudley, K. L. (2011). Caution: Fragile! Regulating the interpersonal security of chronically insecure partners. *Journal of Personality and Social Psychology*, *100*(4), 681–702. https://doi.org/10.1037/a0021655

Luke, M. A., Sedikides, C., & Carnelley, K. (2012). Your Love Lifts Me Higher! The Energizing Quality of Secure Relationships. *Personality and Social Psychology Bulletin*, *38*(6), 721–733. https://doi.org/10.1177/0146167211436117

Maisel, N. C., & Gable, S. L. (2009). The Paradox of Received Social Support: The Importance of Responsiveness. *Psychological Science*, *20*(8), 928–932. https://doi.org/10.1111/j.1467-9280.2009.02388.x

McNulty, J. K. (2016). Chapter Five—Highlighting the Contextual Nature of Interpersonal Relationships. In J. M. Olson & M. P. Zanna (Eds.), *Advances in Experimental Social Psychology* (Vol. 54, pp. 247–315). Academic Press. https://doi.org/10.1016/bs.aesp.2016.02.003

McNulty, J. K., & Dugas, A. (2019). A dyadic perspective on gratitude sheds light on both its benefits and its costs: Evidence that low gratitude acts as a "weak link". *Journal of Family Psychology*, *33*(7), 876–881. https://doi.org/10.1037/fam0000533

McNulty, J. K., & Fincham, F. D. (2012). Beyond positive psychology? Toward a contextual view of psychological processes and well-being. *The American psychologist*, *67*(2), 101–110. https://doi.org/10.1037/a0024572

Mikulincer, M., & Shaver, P. R. (2007). *Attachment in Adulthood: Structure, Dynamics, and Change*. Guilford Press.

Muller, D., Judd, C. M., & Yzerbyt, V. Y. (2005). When moderation is mediated and mediation is moderated. *Journal of personality and social psychology*, *89*(6), 852. https://doi.org/10.1037/0022-3514.89.6.852

Murray, S. L., Bellavia, G. M., Rose, P., & Griffin, D. W. (2003a). Once hurt, twice hurtful: How perceived regard regulates daily marital interactions. *Journal of Personality and Social Psychology*, *84*(1), 126–147. https://doi.org/10.1037/0022-3514.84.1.126

Murray, S. L., Griffin, D. W., Rose, P., & Bellavia, G. M. (2003b). Calibrating the sociometer: The relational contingencies of self-esteem. *Journal of Personality and Social Psychology*, *85*(1), 63–84. https://doi.org/10.1037/0022-3514.85.1.63

Murray, S. L., & Holmes, J. G. (2009). The architecture of interdependent minds: A motivation-management theory of mutual responsiveness. *Psychological Review*, *116*(4), 908–928. https://doi.org/10.1037/a0017015

Murray, S. L., Holmes, J. G., & Collins, N. L. (2006). Optimizing assurance: The risk regulation system in relationships. *Psychological Bulletin*, *132*(5), 641–666. https://doi.org/10.1037/0033-2909.132.5.641

Murray, S. L., Holmes, J. G., & Griffin, D. W. (2000). Self-esteem and the quest for felt security: how perceived regard regulates attachment processes. *Journal of personality and social psychology*, *78*(3), 478. https://doi.org/10.1037/0022-3514.78.3.478

Murray, S. L., Holmes, J. G., MacDonald, G., & Ellsworth, P. C. (1998). Through the looking glass darkly? When self-doubts turn into relationship insecurities. *Journal of Personality and Social Psychology*, *75*(6), 1459–1480. https://doi.org/10.1037/0022-3514.75.6.1459

Murray, S. L., Rose, P., Holmes, J. G., Derrick, J., Podchaski, E. J., Bellavia, G., & Griffin, D. W. (2005). Putting the partner within reach: a dyadic perspective on felt security in

close relationships. *Journal of Personality and Social Psychology*, *88*(2), 327.

https://doi.org/10.1037/0022-3514.88.2.327

Murray, S. L., Rose, P., Bellavia, G. M., Holmes, J. G., & Kusche, A. G. (2002). When

rejection stings: how self-esteem constrains relationship-enhancement processes.

Journal of personality and social psychology, *83*(3), 556.

Neff, L. A., & Karney, B. R. (2005). To Know You Is to Love You: The Implications of

Global Adoration and Specific Accuracy for Marital Relationships. *Journal of*

Personality and Social Psychology, *88*(3), 480–497. https://doi.org/10.1037/0022-

3514.88.3.480

Notarius, C. I., Benson, P. R., Sloane, D., Vanzetti, N. A., & et al. (1989). Exploring the

interface between perception and behavior: An analysis of marital interaction in

distressed and nondistressed couples. *Behavioral Assessment*, *11*(1), 39–64.

Oriña, M. M., Collins, W. A., Simpson, J. A., Salvatore, J. E., Haydon, K. C., & Kim, J. S.

(2011). Developmental and Dyadic Perspectives on Commitment in Adult Romantic

Relationships. *Psychological Science*, *22*(7), 908–915.

https://doi.org/10.1177/0956797611410573

Otero, M. C., Wells, J. L., Chen, K.-H., Brown, C. L., Connelly, D. E., Levenson, R. W., &

Fredrickson, B. L. (2020). Behavioral indices of positivity resonance associated with

long-term marital satisfaction. *Emotion*, *20*(7), 1225–1233.

https://doi.org/10.1037/emo0000634

Overall, N. C. (2018). Does Partners' Negative-Direct Communication During Conflict Help

Sustain Perceived Commitment and Relationship Quality Across Time? *Social*

Psychological and Personality Science, *9*(4), 481–492.

https://doi.org/10.1177/1948550617712030

Overall, N. C., & McNulty, J. K. (2017). What type of communication during conflict is

    beneficial for intimate relationships? *Current Opinion in Psychology*, *13*, 1–5.

    https://doi.org/10.1016/j.copsyc.2016.03.002

Overall, N.C., Pietromonaco, P.R. & Simpson, J.A. (2022). The impact of adult attachment

    on couple and family functioning. *Nature Reviews Psychology*, *1*, 101-111.

    https://doi.org/10.1038/s44159-021-00011-1

Overall, N. C., & Sibley, C. G. (2009a). Attachment and dependence regulation within daily

    interactions with romantic partners. *Personal Relationships*, *16*(2), 239–261.

    https://doi.org/10.1111/j.1475-6811.2009.01221.x

Overall, N. C., & Sibley, C. G. (2009b). When Rejection Sensitivity Matters: Regulating

    Dependence Within Daily Interactions With Family and Friends. *Personality and*

    Social Psychology Bulletin, *35*(8), 1057–1070.

    https://doi.org/10.1177/0146167209336754

Overall, N. C., & Simpson, J. A. (2015). Attachment and dyadic regulation processes.

    Current Opinion in Psychology, *1*, 61–66.

    https://doi.org/10.1016/j.copsyc.2014.11.008

Park, Y., Impett, E. A., MacDonald, G., & Lemay, E. P., Jr. (2019). Saying "thank you":

    Partners' expressions of gratitude protect relationship satisfaction and commitment

    from the harmful effects of attachment insecurity. *Journal of Personality and Social*

    Psychology, *117*(4), 773–806. https://doi.org/10.1037/pspi0000178

Reis, H. T. (2007). Steps toward the ripening of relationship science. *Personal Relationships*,

    14(1), 1–23. https://doi.org/10.1111/j.1475-6811.2006.00139.x

Reis, H. T. (2012). Perceived partner responsiveness as an organizing theme for the study of

    relationships and well-being. In L. Campbell & T. J. Loving (Eds.), *Interdisciplinary*

research on close relationships: The case for integration. (pp. 27–52). American
Psychological Association. https://doi.org/10.1037/13486-002

Reis, H.T. & Clark, M.S. (2014). Responsiveness. In J. Simpson & L. Campbell (Eds.)
Handbook of Close Relationships. Oxford University Press.

Reis, H. T., Clark, M. S., & Holmes, J. G. (2004). Perceived Partner Responsiveness as an
Organizing Construct in the Study of Intimacy and Closeness. In D. J. Mashek & A.
P. Aron (Eds.), *Handbook of closeness and intimacy* (pp. 201–225). Lawrence
Erlbaum Associates Publishers.

Rholes, W. S., Simpson, J. A., & Oriña, M. M. (1999). Attachment and anger in an anxiety-
provoking situation. *Journal of Personality and Social Psychology*, *76*(6), 940–957.
https://doi.org/10.1037/0022-3514.76.6.940

Rosenthal, R., & Rosnow, R. L. (2007). *Essentials of behavioral research: Methods and data
analysis* (3rd ed.). McGraw-Hill.

Ruan, Y., Reis, H. T., Clark, M. S., Hirsch, J. L., & Bink, B. D. (2020). Can I tell you how I
feel? Perceived partner responsiveness encourages emotional expression. *Emotion*,
20(3), 329–342. https://doi.org/10.1037/emo0000650

Rubin, Z. (1970). Measurement of romantic love. *Journal of Personality and Social
Psychology, 16*(2), 265–273. https://doi.org/10.1037/h0029841

Rusbult, C. E., Verette, J., Whitney, G. A., Slovik, L. F., & et al. (1991). Accommodation
processes in close relationships: Theory and preliminary empirical evidence. *Journal
of Personality and Social Psychology*, *60*(1), 53–78. https://doi.org/10.1037/0022-
3514.60.1.53

Ryan, R. M., & Deci, E. L. (2000). Self-Determination Theory and the Facilitation of
Intrinsic Motivation, Social Development, and Well-Being. *American Psychologist*,
55(1), 68–78.

Sasaki, E., & Overall, N. (2021). Partners' withdrawal when actors behave destructively: Implications for perceptions of partners' responsiveness and relationship satisfaction. *Personality and Social Psychology Bulletin*, *47*(2), 307–323. https://doi.org/10.1177/0146167220926820

Sasaki, E., Overall, N. C., Chang, V. T., & Low, R. S. T. (2021). A dyadic perspective of expressive suppression: Own or partner suppression weakens relationships. *Emotion*. Advance online publication. https://doi.org/10.1037/emo0000978

Schoppe, S. J., Mangelsdorf, S. C., & Frosch, C. A. (2001). Coparenting, family process, and family structure: Implications for preschoolers' externalizing behavior problems. *Journal of Family Psychology*, *15*(3), 526–545. https://doi.org/10.1037/0893-3200.15.3.526

Simpson, J. A. (1990). Influence of attachment styles on romantic relationships. *Journal of personality and social psychology*, *59*(5), 971. https://doi.org/10.1037/0022-3514.59.5.971

Simpson, J. A., & Overall, N. C. (2014). Partner Buffering of Attachment Insecurity. *Current Directions in Psychological Science*, *23*(1), 54–59. https://doi.org/10.1177/0963721413510933

Simpson, J. A., & Rholes, W. S. (2017). Adult attachment, stress, and romantic relationships. *Current Opinion in Psychology*, *13*, 19–24. https://doi.org/10.1016/j.copsyc.2016.04.006

Simpson, J. A., Rholes, W. S., & Phillips, D. (1996). Conflict in close relationships: An attachment perspective. *Journal of Personality and Social Psychology*, *71*(5), 899–914. https://doi.org/10.1037/0022-3514.71.5.899

Sprecher, S., & Fehr, B. (2005). Compassionate love for close others and humanity. *Journal of social and personal relationships*, *22*(5), 629-651.

https://doi.org/10.1177/0265407505056439

Steck, L., Levitan, D., McLane, D., & Kelley, H. H. (1982). Care, need, and conceptions of love. *Journal of Personality and Social Psychology*, *43*(3), 481.

Sternberg, R. J. (1997). Construct validation of a triangular love scale. *European Journal of Social Psychology*, *27*(3), 313–335.

Sternberg, R. J. (1986). A triangular theory of love. *Psychological Review, 93*(2), 119–135. https://doi.org/10.1037/0033-295X.93.2.119

Thomson, R. A., Overall, N. C., Cameron, L. D., & Low, R. S. T. (2018). Perceived regard, expressive suppression during conflict, and conflict resolution. *Journal of Family Psychology*, *32*(6), 722–732. https://doi.org/10.1037/fam0000429

Tofighi, D., & MacKinnon, D. P. (2011). RMediation: An R package for mediation analysis confidence intervals. *Behavior research methods*, *43*(3), 692-700.

https://doi.org/10.3758/s13428-011-0076-x

Tran, S., & Simpson, J. A. (2009). Prorelationship maintenance behaviors: The joint roles of attachment and commitment. *Journal of Personality and Social Psychology*, *97*(4), 685–698. https://doi.org/10.1037/a0016418

Von Culin, K. R., Hirsch, J. L., & Clark, M. S. (2018). Willingness to express emotion depends upon perceiving partner care. *Cognition and Emotion*, *32*(3), 641-650.

https://doi.org/10.1080/02699931.2017.1331906

Waller, W. W., & Hill, R. (1951). *The family, a dynamic interpretation*. Dryden Press.

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*, *25*(5), 942-966. https://doi.org/10.1037%2F0022-3514.77.5.942